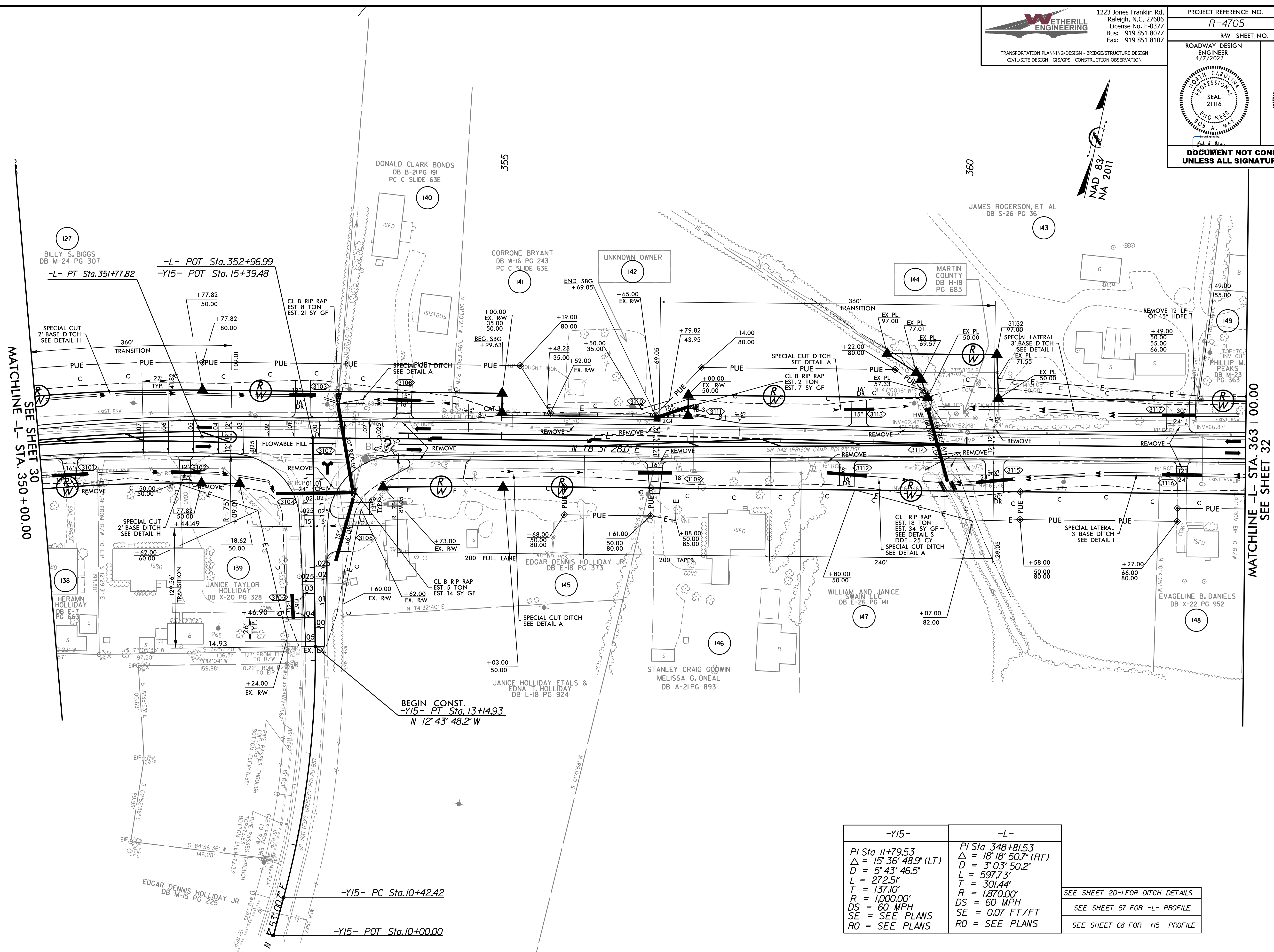
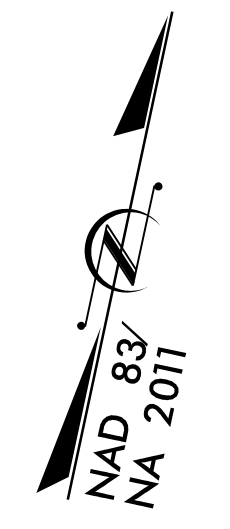


**This electronic collection of documents is provided
for the convenience of the user
and is Not a Certified Document –**

**The documents contained herein were originally issued
and sealed by the individuals whose names and license
numbers appear on each page, on the dates appearing
with their signature on that page.**

**This file or an individual page
shall not be considered a certified document.**



REVISIONS

MATCHLINE -L- STA. 350 + 00.00
SEE SHEET 30

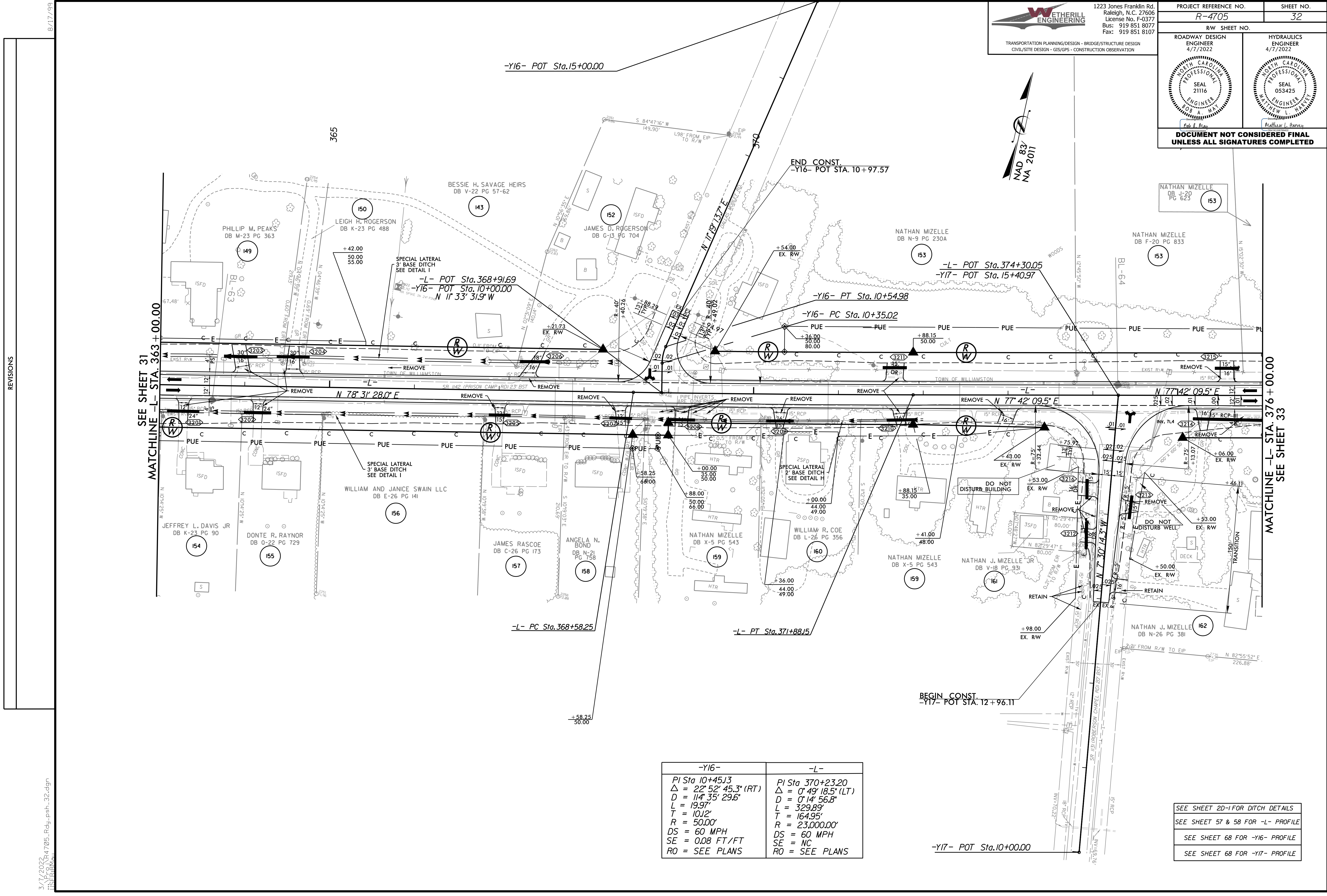
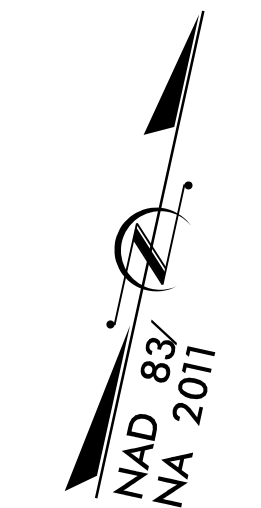
MATCHLINE -L- STA. 363 + 00.00
SEE SHEET 32

BEGIN CONST.
-Y15- PT Sta. 13+14.93
N 12° 43' 48.2" W

-Y15-	-L-
PI Sta 11+79.53	PI Sta 348+81.53
$\Delta = 15' 36' 48.9"$ (LT)	$\Delta = 18' 18' 50.7"$ (RT)
D = 5' 43' 46.5"	D = 3' 03' 50.2"
L = 272.5'	L = 597.73'
T = 137.10'	T = 301.44'
R = 1,000.00'	R = 1,870.00'
DS = 60 MPH	DS = 60 MPH
SE = SEE PLANS	SE = 0.07 FT/FT
RO = SEE PLANS	RO = SEE PLANS

SEE SHEET 20-1 FOR DITCH DETAILS
 SEE SHEET 57 FOR -L- PROFILE
 SEE SHEET 68 FOR -Y15- PROFILE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



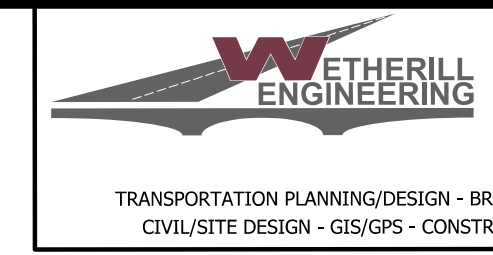
REVISIONS

SEE SHEET 31
MATCHLINE -L- STA. 363 + 00.00

MATCHLINE -L- STA. 376 + 00.00
SEE SHEET 33

-Y16-	-L-
PI Sta 10+4513	PI Sta 370+23.20
$\Delta = 22^\circ 52' 45.3" (RT)$	$\Delta = 0^\circ 49' 18.5" (LT)$
$D = 114' 35' 29.6"$	$D = 0' 14' 56.8"$
$L = 19.97'$	$L = 329.89'$
$T = 10.12'$	$T = 164.95'$
$R = 50.00'$	$R = 23,000.00'$
$DS = 60 \text{ MPH}$	$DS = 60 \text{ MPH}$
$SE = 0.08 \text{ FT/FT}$	$SE = \text{NC}$
$RO = \text{SEE PLANS}$	$RO = \text{SEE PLANS}$

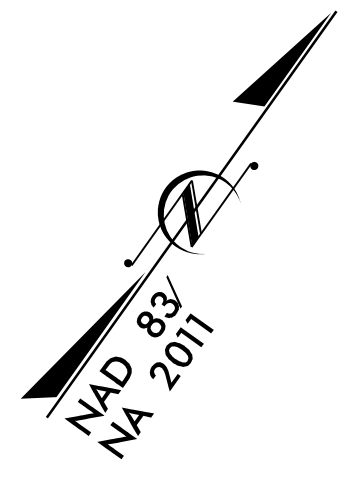
SEE SHEET 20-I FOR DITCH DETAILS
 SEE SHEET 57 & 58 FOR -L- PROFILE
 SEE SHEET 68 FOR -Y16- PROFILE
 SEE SHEET 68 FOR -Y17- PROFILE



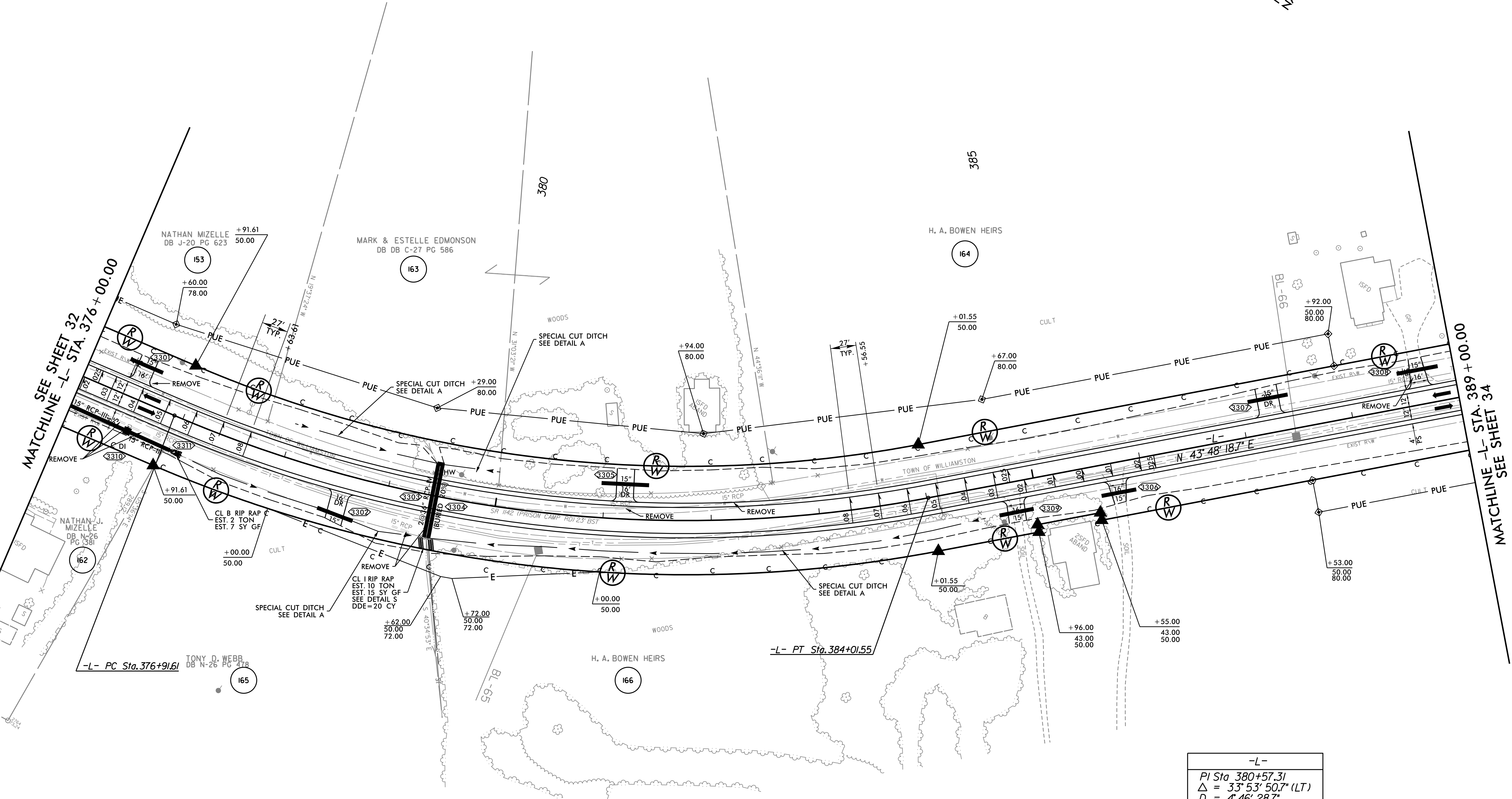
1223 Jones Franklin Rd.
Raleigh, N.C. 27606
License No. F-0377
Bus: 919 851 8077
Fax: 919 851 8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

PROJECT REFERENCE NO. R-4705	SHEET NO. 33
RW SHEET NO.	HYDRAULICS ENGINEER 4/7/2022
ROADWAY DESIGN ENGINEER 4/7/2022	HYDRAULICS ENGINEER 4/7/2022
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



REVISIONS



MATCHLINE -L- STA. 376+00.00
SEE SHEET 32

MATCHLINE -L- STA. 389+00.00
SEE SHEET 34


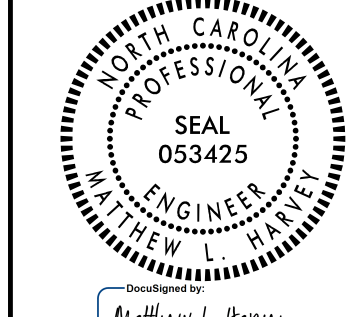
-L-
PI Sta 380+57.31
$\Delta = 33^\circ 53' 50.7''$ (LT)
$D = 4' 46' 28.7''$
$L = 709.95'$
$T = 365.70'$
$R = 1,200.00'$
$DS = 60$ MPH
$SE = 0.08$ FT/FT
$RO =$ SEE PLANS

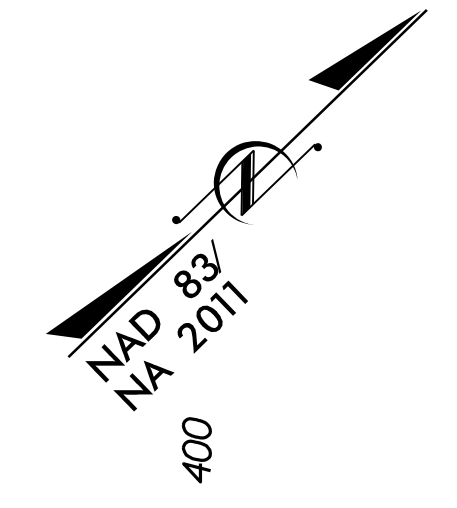
SEE SHEET 2D-1 FOR DITCH DETAILS
SEE SHEET 58 FOR -L- PROFILE

3/17/2022 14:47:05 Rdy_psh_33.dgn
USER:RDM

WETHERILL ENGINEERING
 1223 Jones Franklin Rd.
 Raleigh, N.C. 27606
 License No. F-0377
 Bus: 919 851 8077
 Fax: 919 851 8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

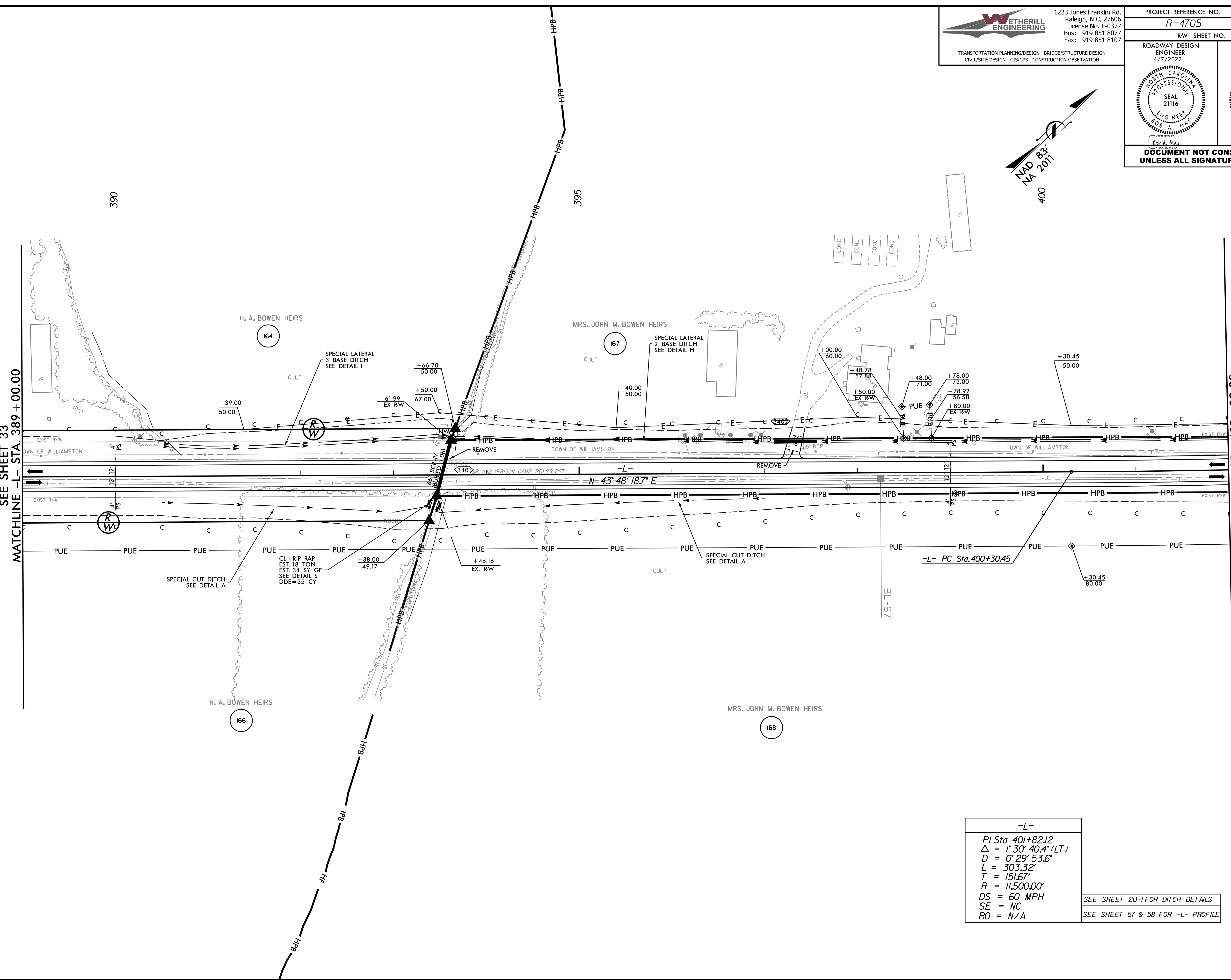
PROJECT REFERENCE NO. R-4705	SHEET NO. 34
RW SHEET NO.	HYDRAULICS ENGINEER 4/7/2022
ROADWAY DESIGN ENGINEER 4/7/2022	CIVIL/SITE DESIGN ENGINEER 4/7/2022
 BOB A. MAY ENGINEER SEAL 21116	 MATTHEW L. BARRETT ENGINEER SEAL 053425
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



REVISIONS

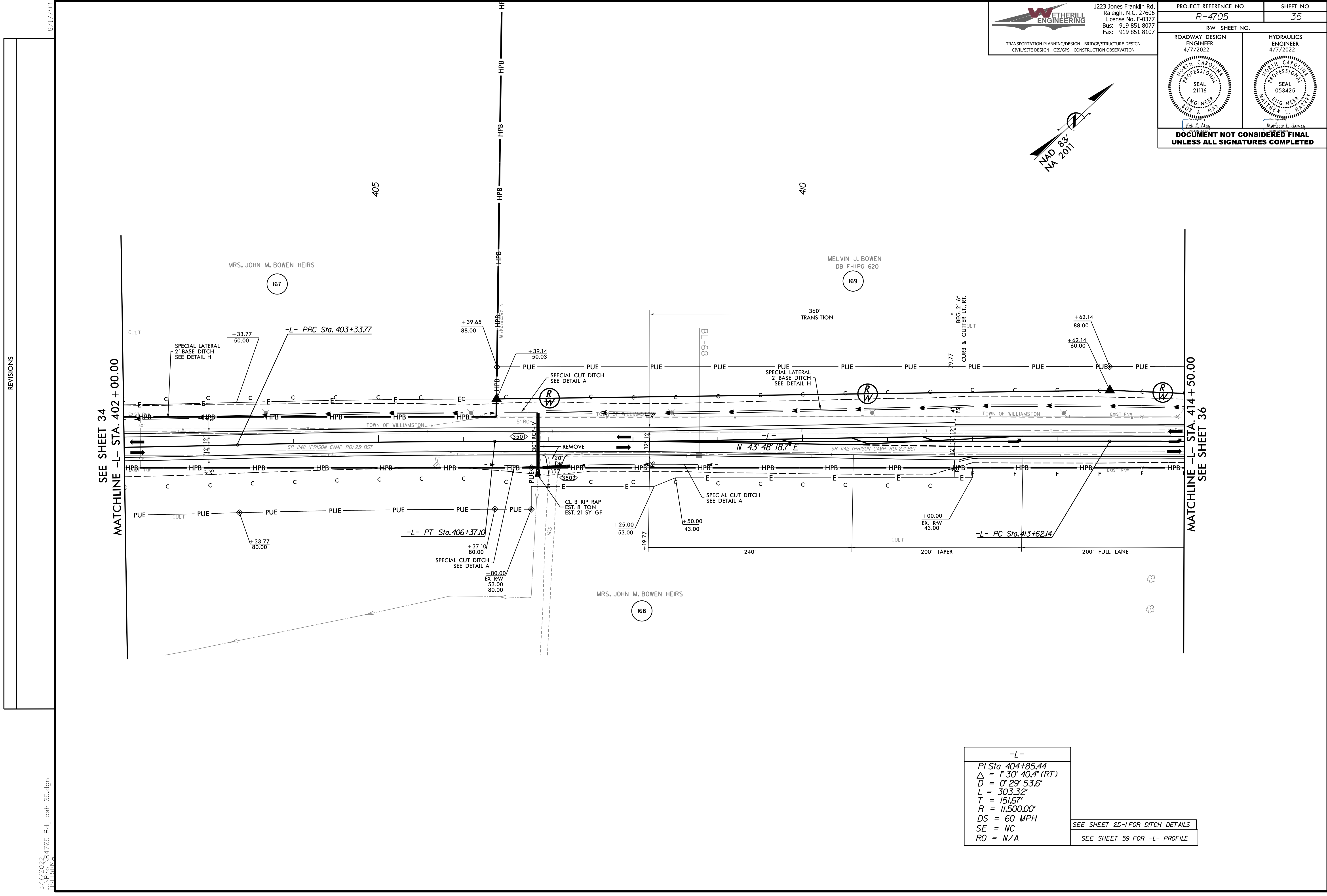
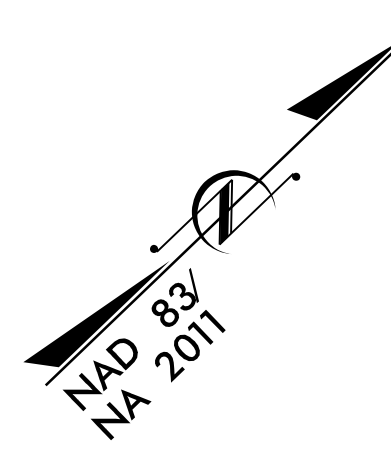
SEE SHEET 33
MATCHLINE -L- STA. 389+00.00

MATCHLINE -L- STA. 402+00.00
SEE SHEET 35



-L-
PI Sta 401+82.12
$\Delta = 1^\circ 30' 40.4\" (LT)$
$D = 0^\circ 29' 53.6\"$
$L = 303.32'$
$T = 151.67'$
$R = 11,500.00'$
$DS = 60 \text{ MPH}$
$SE = NC$
$RO = N/A$

SEE SHEET 2D-1 FOR DITCH DETAILS
 SEE SHEET 57 & 58 FOR -L- PROFILE



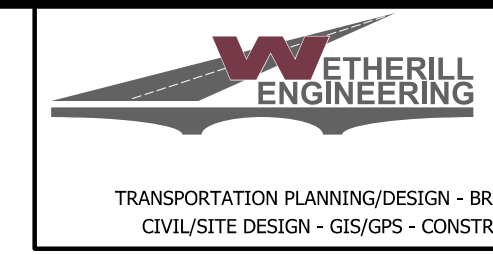
REVISIONS

SEE SHEET 34
MATCHLINE -L- STA. 402+00.00

MATCHLINE -L- STA. 414+50.00
SEE SHEET 36

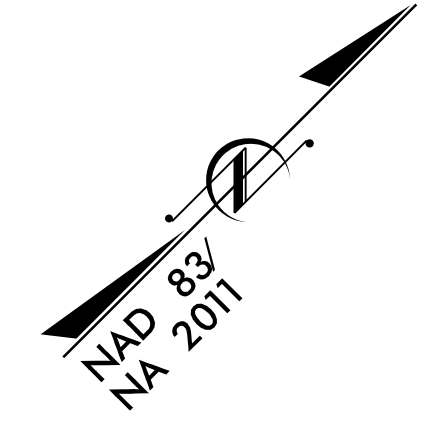
-L-
PI Sta 404+85.44
$\Delta = 1' 30' 40.4" (RT)$
$D = 0' 29' 53.6"$
$L = 303.32'$
$T = 151.67'$
$R = 11,500.00'$
$DS = 60 MPH$
$SE = NC$
$RO = N/A$

SEE SHEET 2D-1 FOR DITCH DETAILS
 SEE SHEET 59 FOR -L- PROFILE

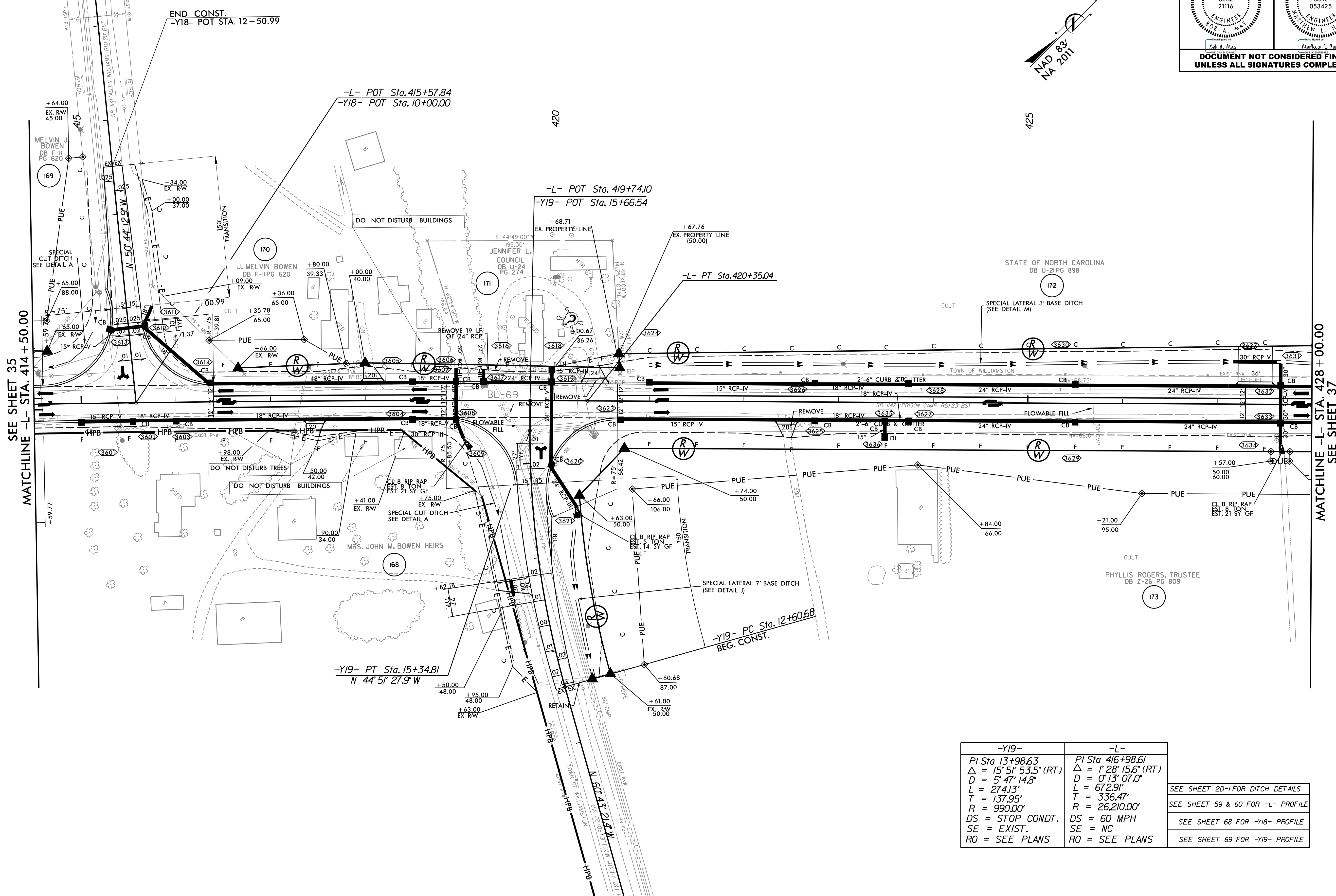


1223 Jones Franklin Rd.
Raleigh, N.C. 27606
License No. F-0377
Bus: 919 851 8077
Fax: 919 851 8107

PROJECT REFERENCE NO. R-4705		SHEET NO. 36	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER 4/7/2022		HYDRAULICS ENGINEER 4/7/2022	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			



REVISIONS



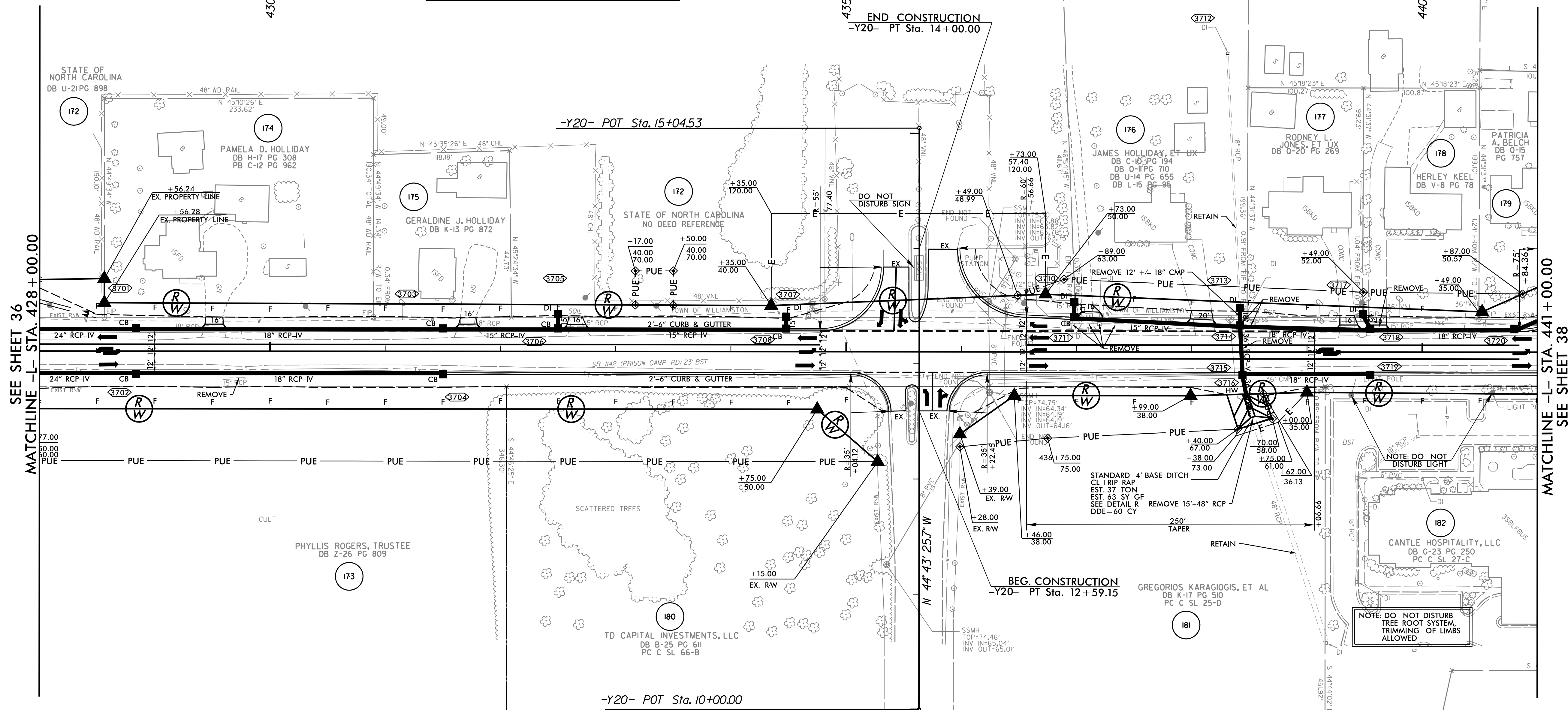
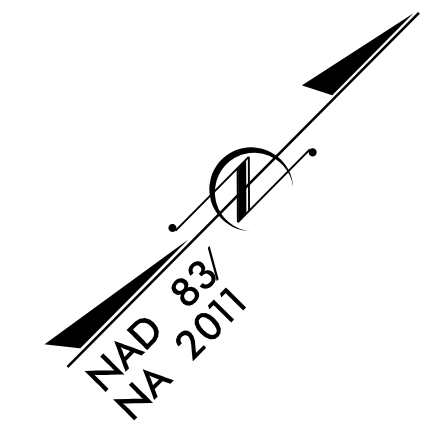
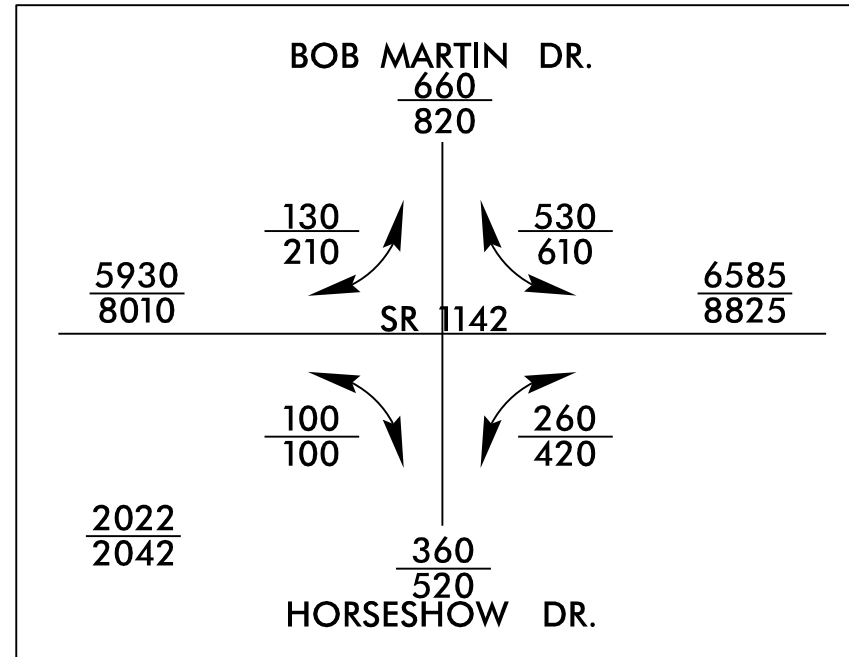
SEE SHEET 35
MATCHLINE -L- STA. 414+50.00

MATCHLINE -L- STA. 428+00.00
SEE SHEET 37

-Y19-	-L-
PI Sta 13+98.63	PI Sta 416+98.61
$\Delta = 15' 51'' 53.5''$ (RT)	$\Delta = 1' 28'' 15.6''$ (RT)
$D = 5' 47'' 14.8''$	$D = 0' 13'' 07.0''$
$L = 274.13'$	$L = 672.91'$
$T = 137.95'$	$T = 336.47'$
$R = 990.00'$	$R = 26,210.00'$
DS = STOP CONDT.	DS = 60 MPH
SE = EXIST.	SE = NC
RO = SEE PLANS	RO = SEE PLANS

SEE SHEET 20-1 FOR DITCH DETAILS
 SEE SHEET 59 & 60 FOR -L- PROFILE
 SEE SHEET 68 FOR -Y18- PROFILE
 SEE SHEET 69 FOR -Y19- PROFILE

3/25/2022 4:47:05 PM rdy_psh_36.dgn

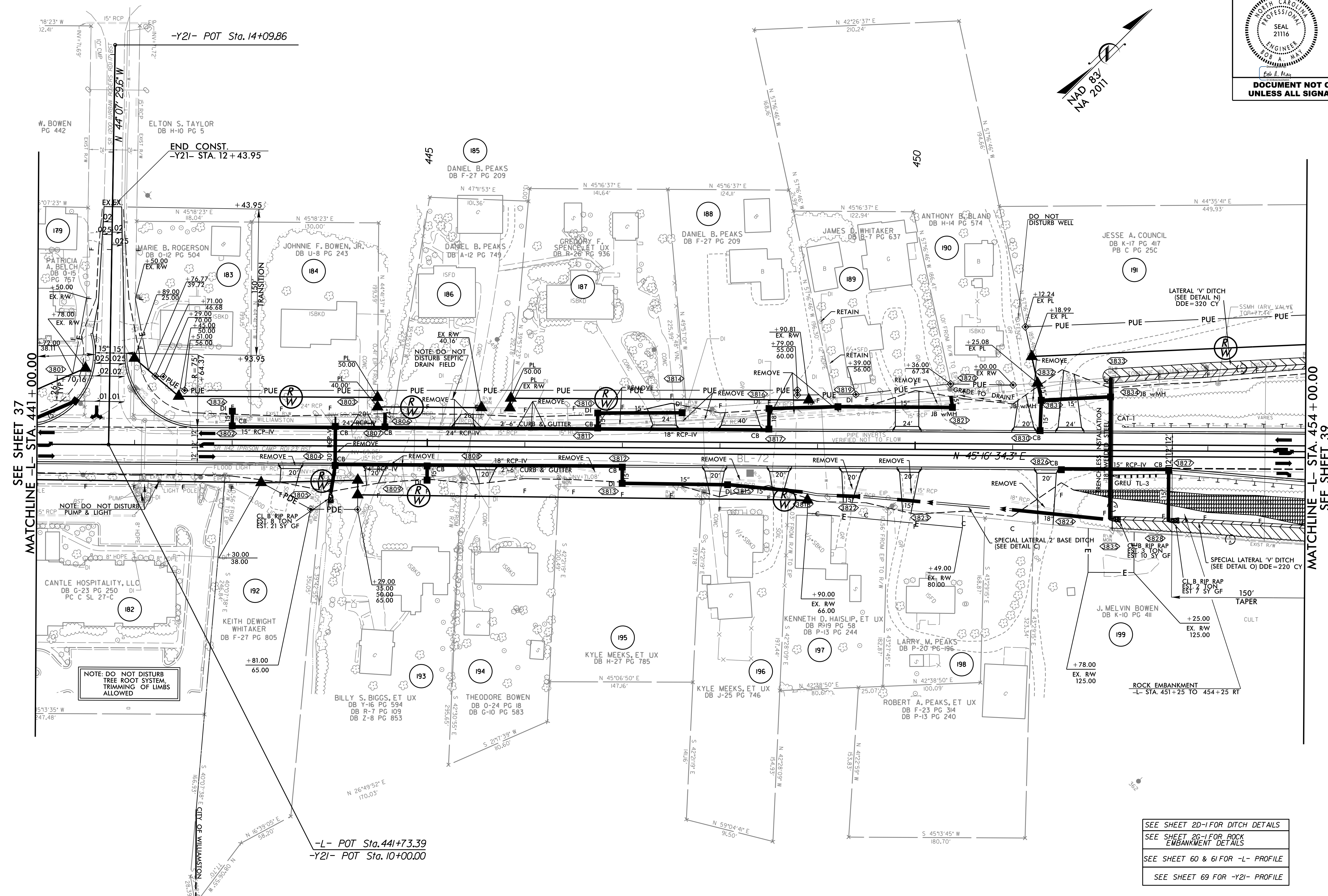
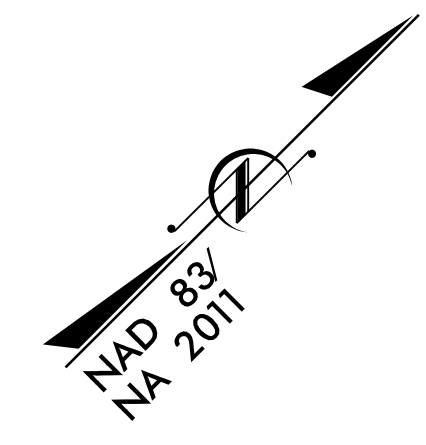


SEE SHEET 36
MATCHLINE -L- STA. 428+00.00

MATCHLINE -L- STA. 441+00.00
SEE SHEET 38

SEE SHEET 20-I FOR DITCH DETAILS
 SEE SHEET 60 FOR -L- PROFILE
 SEE SHEET 69 FOR -Y20- PROFILE

REVISIONS



REVISIONS

SEE SHEET 37
MATCHLINE -L- STA. 441+00.00

MATCHLINE -L- STA. 454+00.00
SEE SHEET 39

NOTE: DO NOT DISTURB
TREE ROOT SYSTEM,
TRIMMING OF LIMBS
ALLOWED

SEE SHEET 20-1 FOR DITCH DETAILS
 SEE SHEET 26-1 FOR ROCK
EMBANKMENT DETAILS
 SEE SHEET 60 & 61 FOR -L- PROFILE
 SEE SHEET 69 FOR -Y2I- PROFILE

3/25/2022 4:05:47 PM Rdy_psh_38.dgn
 8/17/19

B/17/99

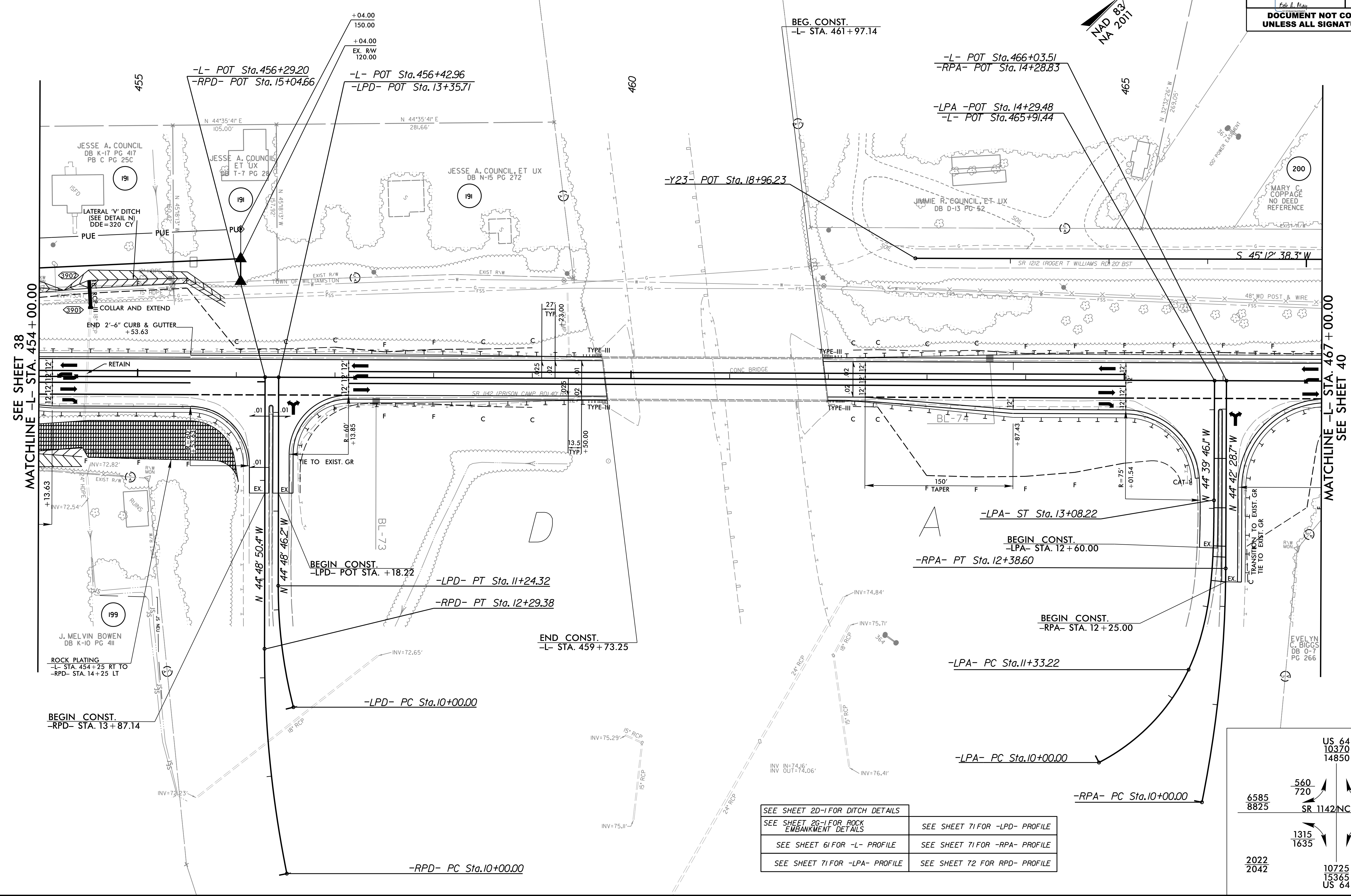
-RPD-	-LPD-	-LPA-	-RPA-
PI Sta 11+5.08 $\Delta = 1^\circ 34' 44.8" (RT)$ $D = 5^\circ 02' 53.1"$ $L = 229.38'$ $T = 115.08'$ $R = 1,135.00'$ $DS = 60 MPH$ $SE = 0.08 FT/FT$ $RO = SEE PLANS$	PI Sta 10+62.49 $\Delta = 14^\circ 31' 10.7" (RT)$ $D = 11^\circ 40' 46.9"$ $L = 124.32'$ $T = 62.49'$ $R = 490.56'$ $DS = 60 MPH$ $SE = 0.08 FT/FT$ $RO = SEE PLANS$	PI Sta 10+69.13 $\Delta = 37^\circ 47' 10.7" (LT)$ $D = 28^\circ 21' 51.3"$ $L = 133.22'$ $T = 69.13'$ $R = 202.00'$ $DS = 60 MPH$ $SE = 0.08 FT/FT$ $RO = SEE PLANS$	PI Sta 11+92.61 $\Theta_s = 24^\circ 49' 07.4"$ $L_s = 175.00'$ $LT = 117.83'$ $ST = 59.40'$
PI Sta 11+96.8 $\Delta = 11^\circ 09' 35.7" (LT)$ $D = 4^\circ 40' 37.9"$ $L = 238.60'$ $T = 119.68'$ $R = 1,225.00'$ $DS = 60 MPH$ $SE = 0.08 FT/FT$ $RO = SEE PLANS$			

WETHERILL ENGINEERING
 1223 Jones Franklin Rd.
 Raleigh, N.C. 27606
 License No: F-0377
 Bus: 919 851 8077
 Fax: 919 851 8107

TRANSPORTATION DESIGN/DESIGN - BRIDGE/STRUCTURE DESIGN
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

PROJECT REFERENCE NO. R-4705	SHEET NO. 39
RW SHEET NO.	HYDRAULICS ENGINEER 4/7/2022
ROADWAY DESIGN ENGINEER 4/7/2022	SEAL 053425 M. HARVEY
SEAL 21116 B. MAY	SEAL 053425 M. HARVEY
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

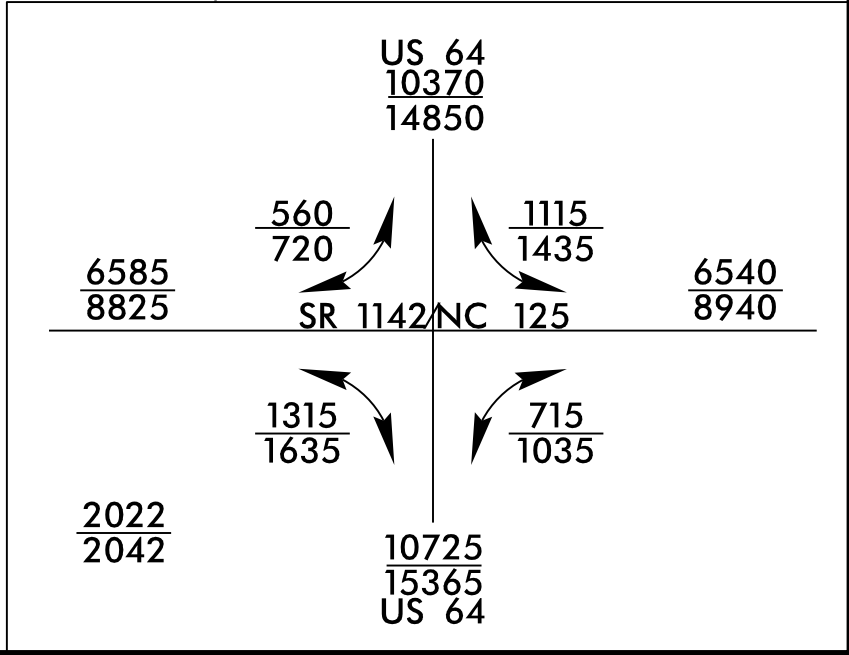
REVISIONS



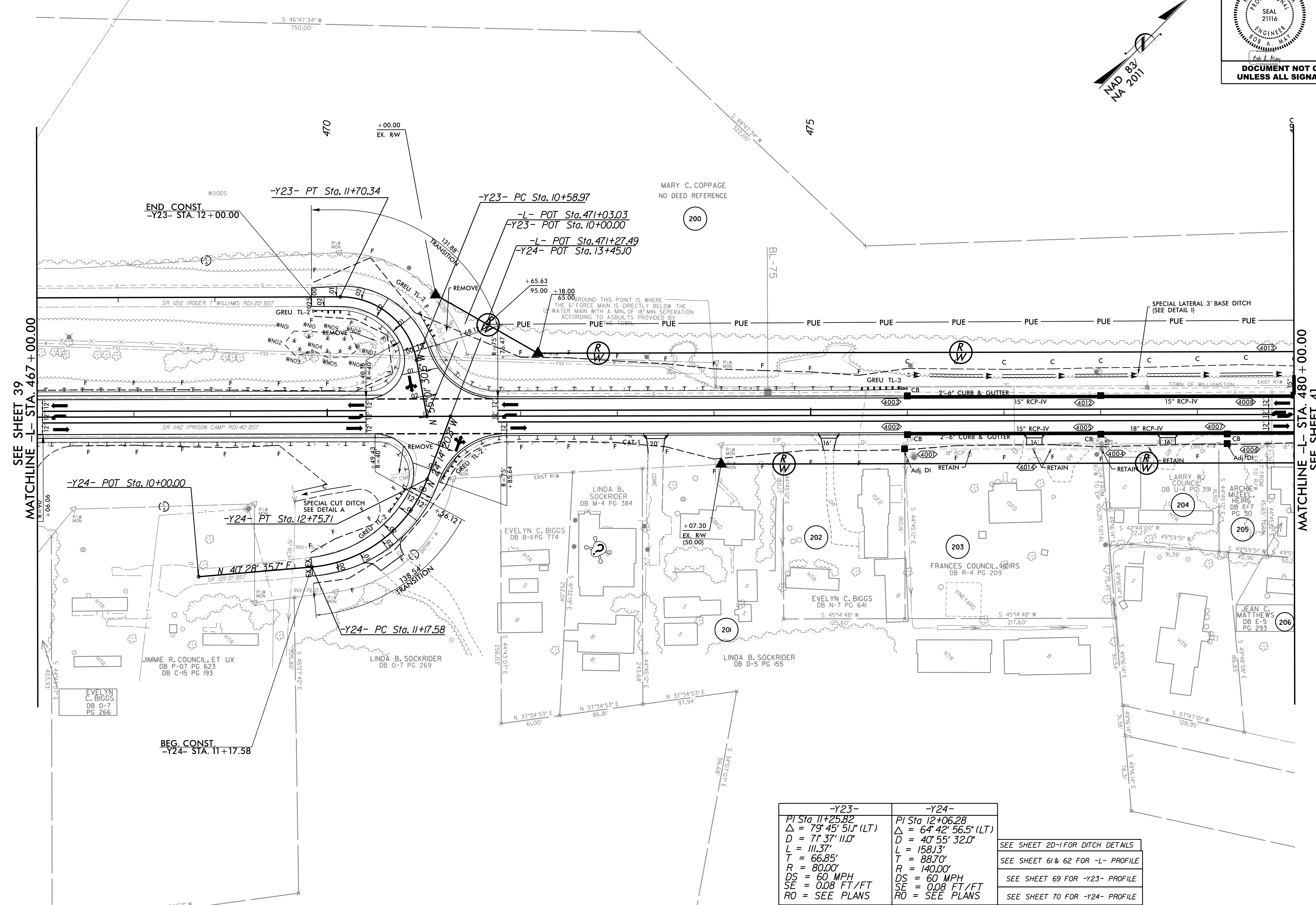
SEE SHEET 38
MATCHLINE -L- STA. 454+00.00

MATCHLINE -L- STA. 467+00.00
SEE SHEET 40

SEE SHEET 2D-1 FOR DITCH DETAILS	SEE SHEET 71 FOR -LPD- PROFILE
SEE SHEET 2G-1 FOR ROCK EMBANKMENT DETAILS	SEE SHEET 71 FOR -RPA- PROFILE
SEE SHEET 61 FOR -L- PROFILE	SEE SHEET 71 FOR -RPA- PROFILE
SEE SHEET 71 FOR -LPA- PROFILE	SEE SHEET 72 FOR RPD- PROFILE



3/17/2022 14:47:05 Rdy_psh_39.dgn



REVISIONS

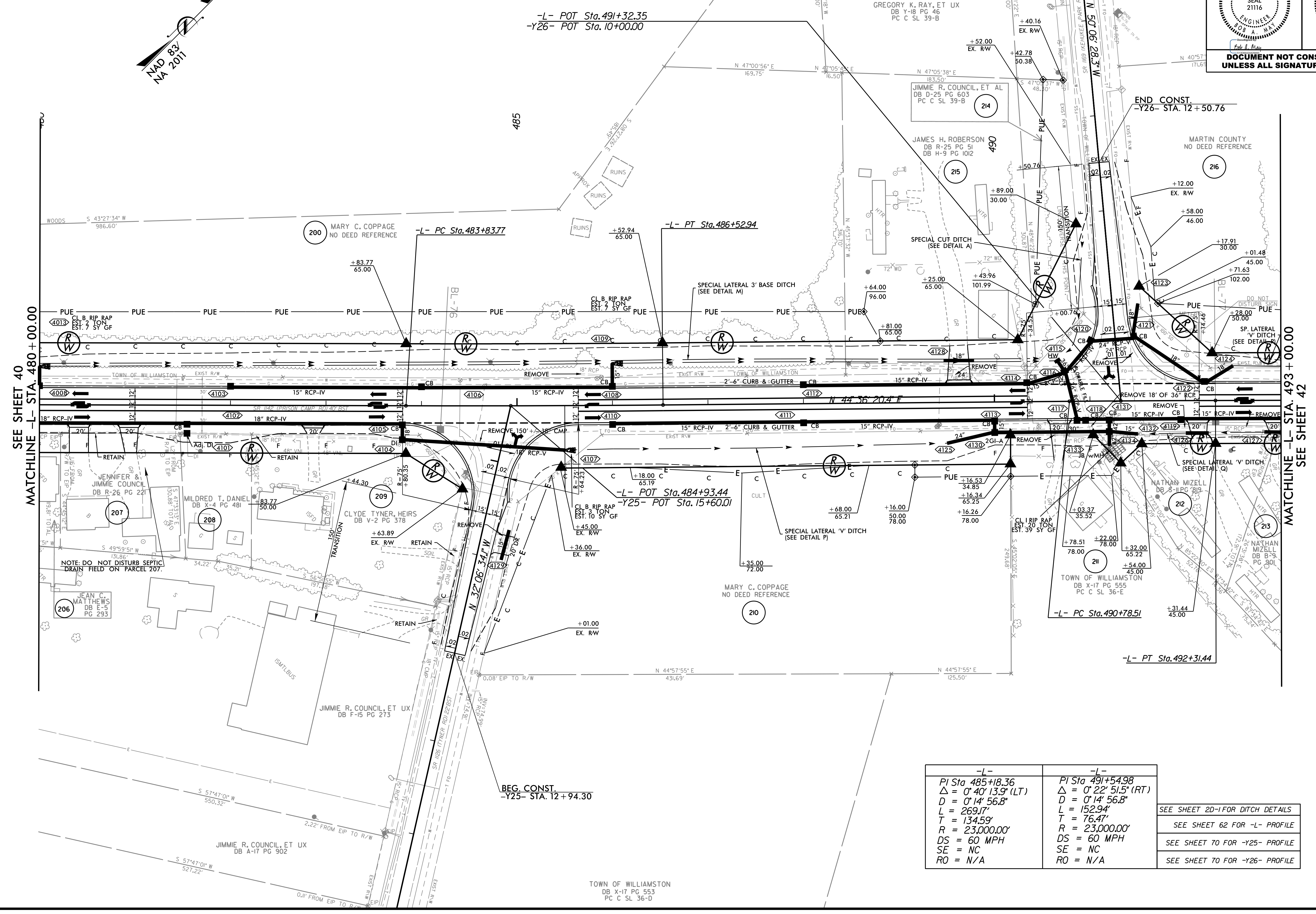
SEE SHEET 39
MATCHLINE -L- STA. 467+00.00

MATCHLINE -L- STA. 480+00.00
SEE SHEET 41

-Y23-	-Y24-
PI Sta 11+25.82	PI Sta 12+06.28
$\Delta = 79^{\circ} 45' 51.1''$ (LT)	$\Delta = 64^{\circ} 42' 56.5''$ (LT)
D = 71' 37" 11.0"	D = 40' 55" 32.0"
L = 111.37'	L = 158.13'
T = 66.85'	T = 88.70'
R = 80.00'	R = 140.00'
DS = 60 MPH	DS = 60 MPH
SE = 0.08 FT/FT	SE = 0.08 FT/FT
RO = SEE PLANS	RO = SEE PLANS

SEE SHEET 20-1 FOR DITCH DETAILS
 SEE SHEET 61 & 62 FOR -L- PROFILE
 SEE SHEET 69 FOR -Y23- PROFILE
 SEE SHEET 70 FOR -Y24- PROFILE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



REVISIONS

SEE SHEET 40
MATCHLINE -L- STA. 480 + 00.00

MATCHLINE -L- STA. 493 + 00.00
SEE SHEET 42

-L-	-L-
PI Sta 485+18.36	PI Sta 491+54.98
$\Delta = 0^\circ 40' 13.9''$ (LT)	$\Delta = 0^\circ 22' 51.5''$ (RT)
$D = 0' 14' 56.8''$	$D = 0' 14' 56.8''$
$L = 269.17'$	$L = 152.94'$
$T = 134.59'$	$T = 76.47'$
$R = 23,000.00'$	$R = 23,000.00'$
$DS = 60$ MPH	$DS = 60$ MPH
$SE = NC$	$SE = NC$
$RO = N/A$	$RO = N/A$

- SEE SHEET 2D-1 FOR DITCH DETAILS
- SEE SHEET 62 FOR -L- PROFILE
- SEE SHEET 70 FOR -Y25- PROFILE
- SEE SHEET 70 FOR -Y26- PROFILE

4/25/2022 4:05:41 PM Rdy_psh_41.dgn

TOWN OF WILLIAMSTON
DB X-17 PG 553
PC C SL 36-D

WETHERILL ENGINEERING
 1223 Jones Franklin Rd.
 Raleigh, N.C. 27606
 License No. F-0377
 Bus: 919 851 8077
 Fax: 919 851 8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

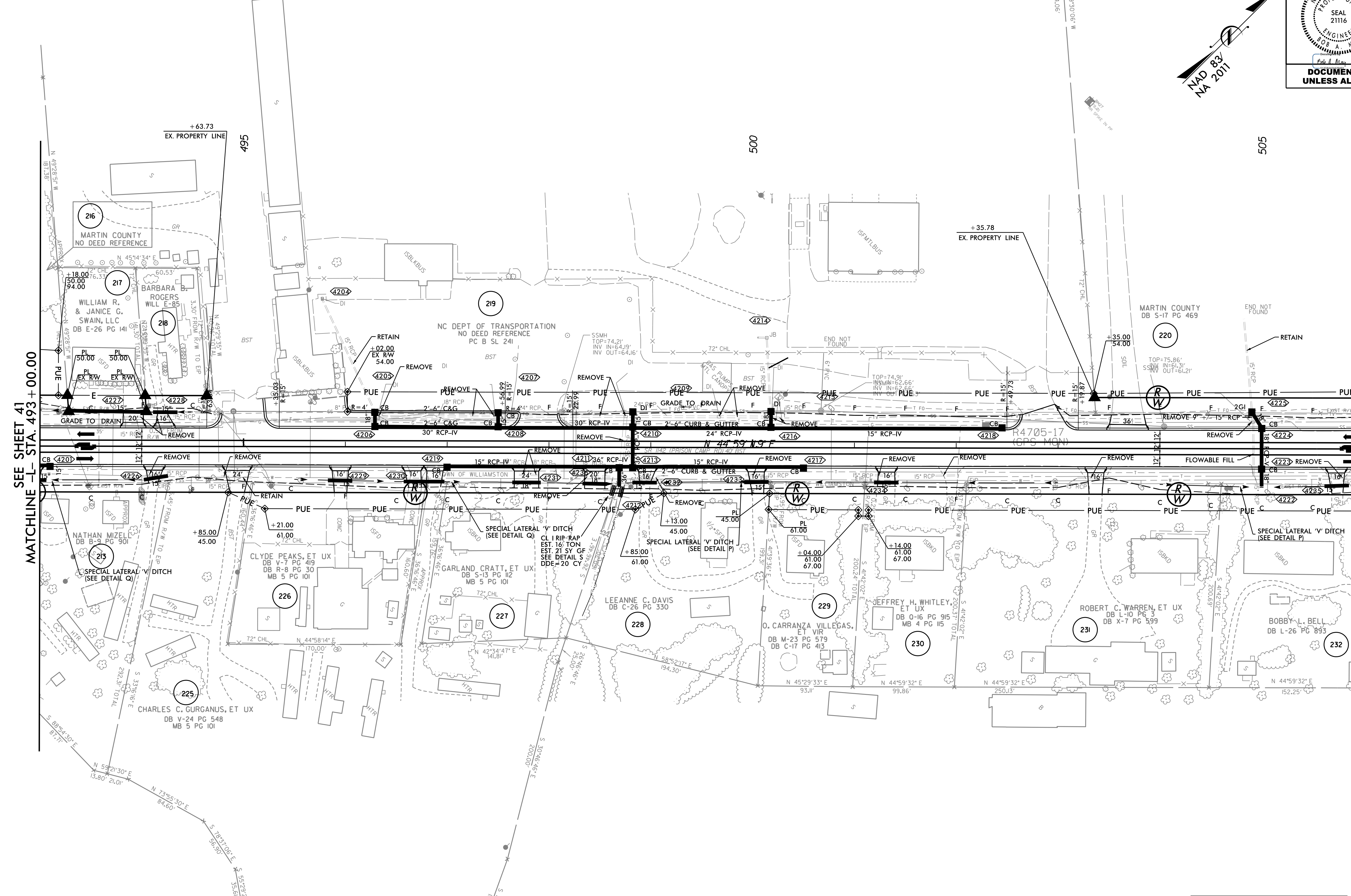
PROJECT REFERENCE NO. R-4705	SHEET NO. 42
R/W SHEET NO.	HYDRAULICS ENGINEER 4/7/2022
ROADWAY DESIGN ENGINEER 4/7/2022	SEAL 21116 ENGINEER MATTHEW HANLEY
<p>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p>	



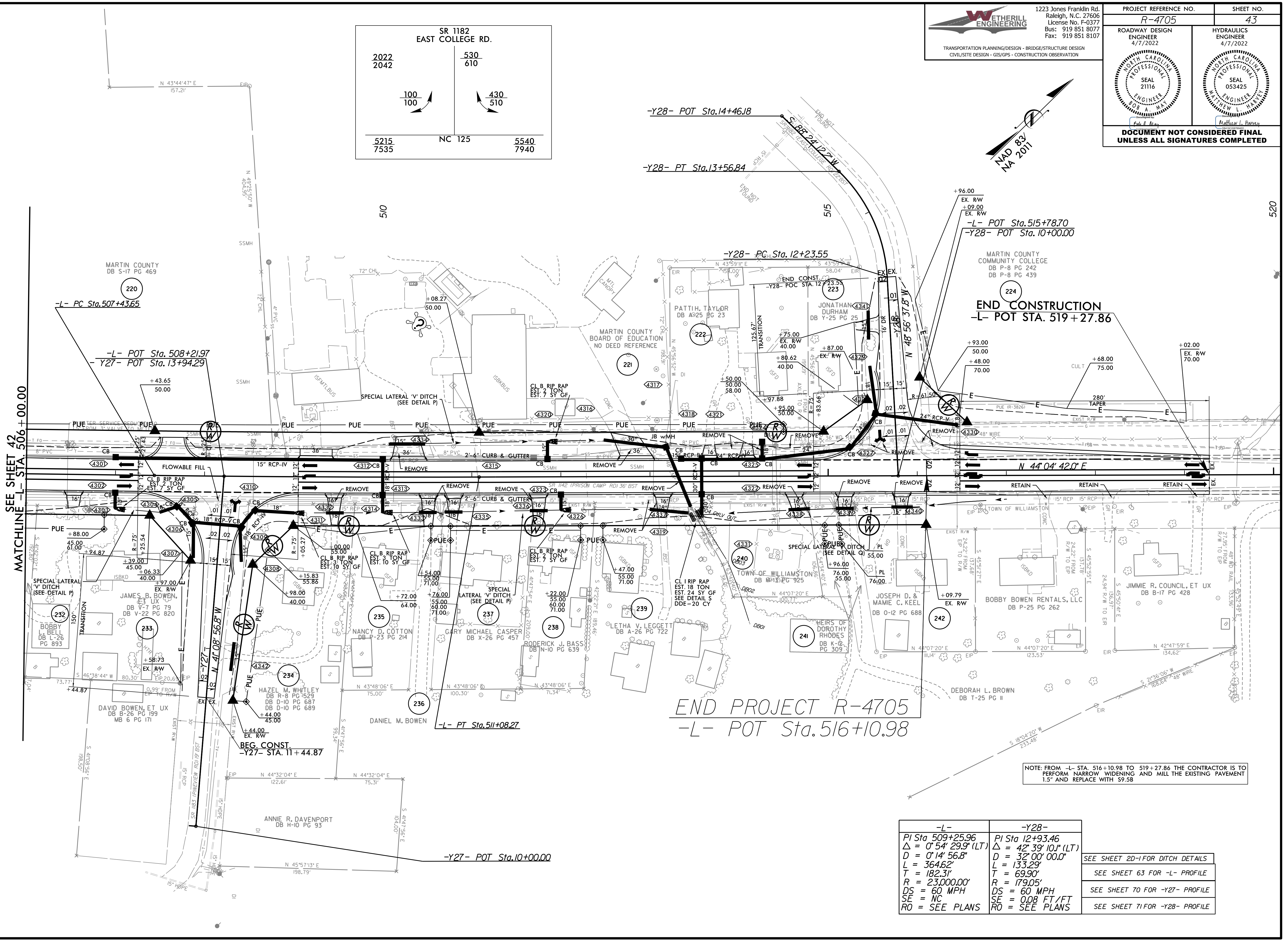
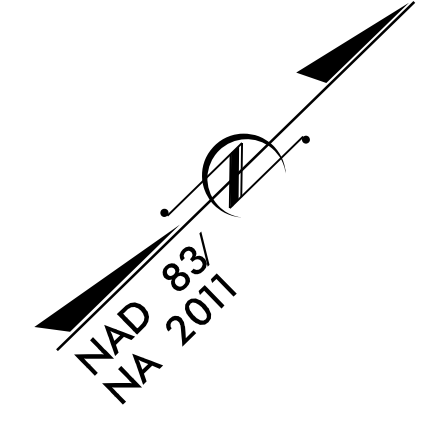
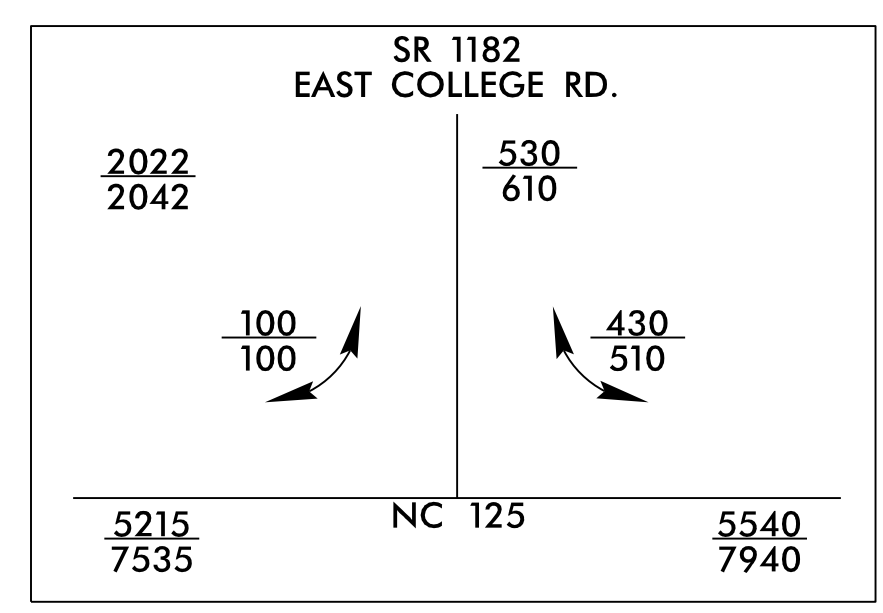
REVISIONS

SEE SHEET 41
MATCHLINE -L- STA. 493+00.00

MATCHLINE -L- STA. 506+00.00
SEE SHEET 43



SEE SHEET 2D-1 FOR DITCH DETAILS
 SEE SHEET 62 & 63 FOR -L- PROFILE



SEE SHEET 42
MATCHLINE -L- STA 506+00.00

END PROJECT R-4705
 -L- POT Sta. 516+10.98

END CONSTRUCTION
 -L- POT STA. 519+27.86

NOTE: FROM -L- STA. 516+10.98 TO 519+27.86 THE CONTRACTOR IS TO PERFORM NARROW WIDENING AND MILL THE EXISTING PAVEMENT 1.5" AND REPLACE WITH S9.5B

-L-	-Y28-	
PI Sta 509+25.96	PI Sta 12+93.46	
$\Delta = 0^{\circ} 54' 29.9''$ (LT)	$\Delta = 42^{\circ} 39' 10.9''$ (LT)	SEE SHEET 20-1 FOR DITCH DETAILS
D = 0' 14' 56.8"	D = 32' 00' 00.0"	SEE SHEET 63 FOR -L- PROFILE
L = 364.62'	L = 133.29'	SEE SHEET 70 FOR -Y27- PROFILE
T = 182.31'	T = 69.90'	SEE SHEET 71 FOR -Y28- PROFILE
R = 23,000.00'	R = 179.05'	
DS = 60 MPH	DS = 60 MPH	
SE = NC	SE = 0.08 FT/FT	
RO = SEE PLANS	RO = SEE PLANS	



REVISIONS

3/7/2022 R4705_Rdy_psh_43.dgn
11:58:50 AM

5/28/99

WETHERILL ENGINEERING
 1223 Jones Franklin Rd.
 Raleigh, N.C. 27606
 License No. F-0377
 Bus: 919 851 8077
 Fax: 919 851 8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

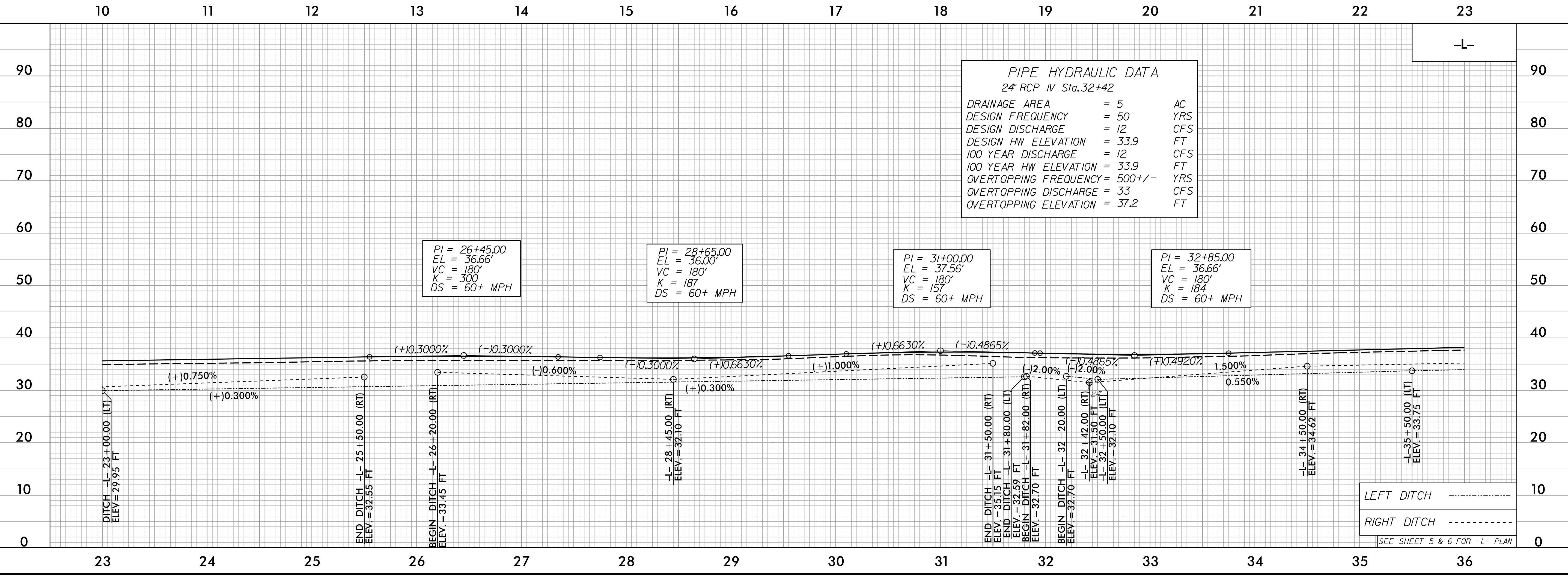
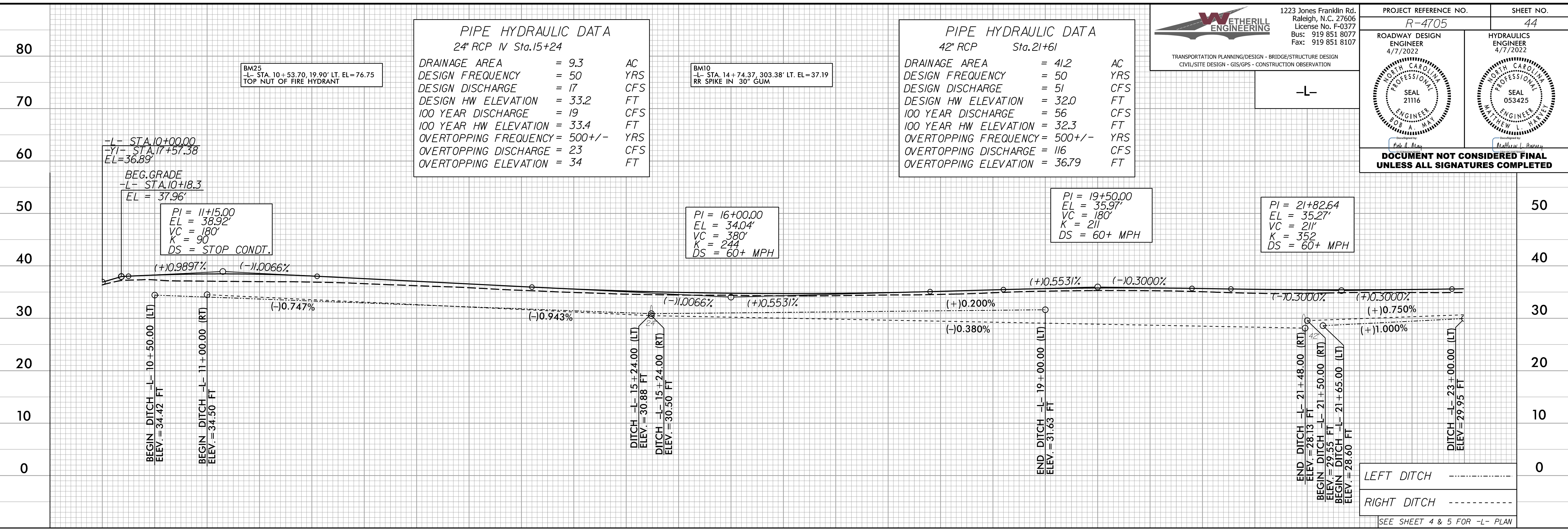
PROJECT REFERENCE NO. R-4705	SHEET NO. 44
ROADWAY DESIGN ENGINEER 4/7/2022 	HYDRAULICS ENGINEER 4/7/2022 
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

PIPE HYDRAULIC DATA
24" RCP IV Sta.15+24

DRAINAGE AREA	= 9.3	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 17	CFS
DESIGN HW ELEVATION	= 33.2	FT
100 YEAR DISCHARGE	= 19	CFS
100 YEAR HW ELEVATION	= 33.4	FT
OVERTOPPING FREQUENCY	= 500+/-	YRS
OVERTOPPING DISCHARGE	= 23	CFS
OVERTOPPING ELEVATION	= 34	FT

PIPE HYDRAULIC DATA
42" RCP Sta.21+61

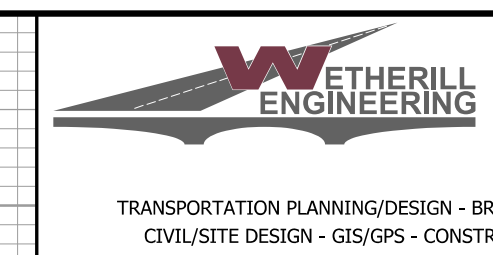
DRAINAGE AREA	= 41.2	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 51	CFS
DESIGN HW ELEVATION	= 32.0	FT
100 YEAR DISCHARGE	= 56	CFS
100 YEAR HW ELEVATION	= 32.3	FT
OVERTOPPING FREQUENCY	= 500+/-	YRS
OVERTOPPING DISCHARGE	= 116	CFS
OVERTOPPING ELEVATION	= 36.79	FT



3/7/2022 R4705_Rdy_psh_44_PFL.dgn
JUSE:RMB

5/28/99

BMT
L- STA. 36+20.98, 244.14 LT. EL=37.41
RR SPIKE IN PP



1223 Jones Franklin Rd.
Raleigh, N.C. 27606
License No. F-0377
Bus: 919 851 8077
Fax: 919 851 8107

PROJECT REFERENCE NO. R-4705	SHEET NO. 45
ROADWAY DESIGN ENGINEER 4/7/2022	HYDRAULICS ENGINEER 4/7/2022

-L-

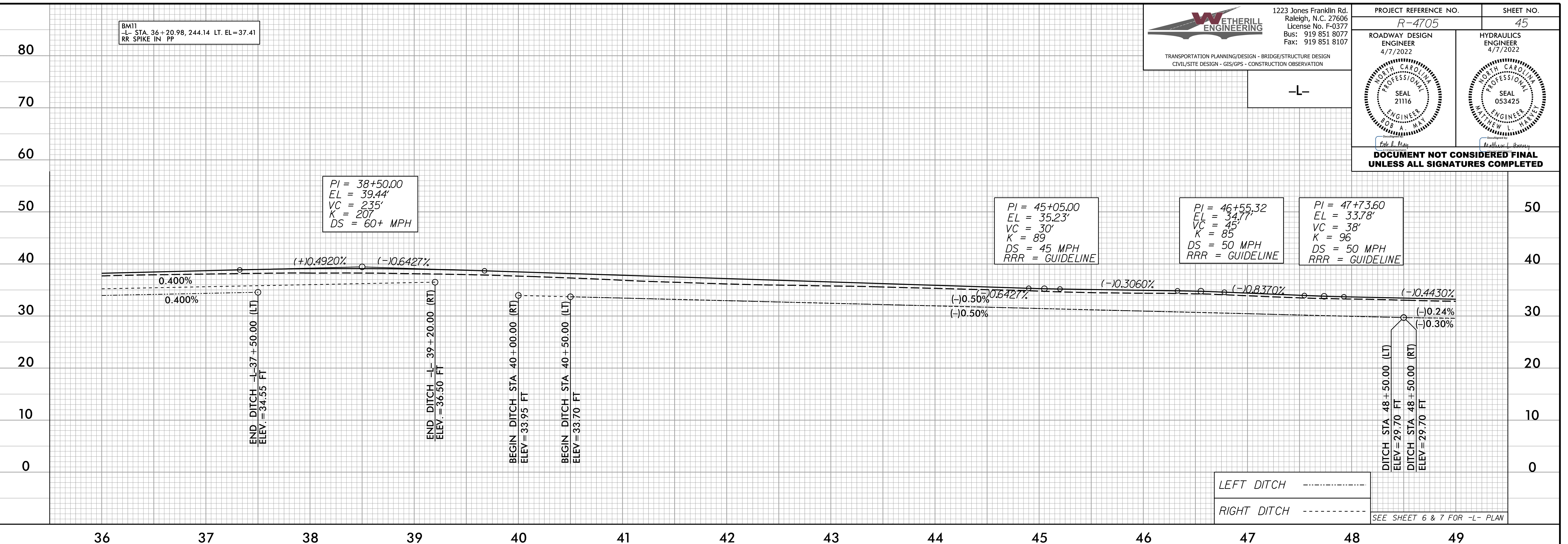
**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**

PI = 38+50.00
EL = 39.44'
VC = 235'
K = 207
DS = 60+ MPH

PI = 45+05.00
EL = 35.23'
VC = 30'
K = 89
DS = 45 MPH
RRR = GUIDELINE

PI = 46+55.32
EL = 34.77'
VC = 45'
K = 85
DS = 50 MPH
RRR = GUIDELINE

PI = 47+73.60
EL = 33.78'
VC = 38'
K = 96
DS = 50 MPH
RRR = GUIDELINE



LEFT DITCH -----
RIGHT DITCH -----

SEE SHEET 6 & 7 FOR -L- PLAN

CULVERT HYDRAULIC DATA	
DESIGN DISCHARGE	= 550 CFS
DESIGN FREQUENCY	= 50 YRS
DESIGN HW ELEVATION	= --- FT
BASE DISCHARGE	= 670 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= --- FT
OVERTOPPING DISCHARGE	= 840+ CFS
OVERTOPPING FREQUENCY	= 10+/- YRS
OVERTOPPING ELEVATION	= 32.2 FT

PI = 49+51.91
EL = 32.99'
VC = 30'
K = 97
DS = 50 MPH
RRR = GUIDELINE

PI = 50+77.92
EL = 32.04'
VC = 117'
K = 111
DS = 50 MPH
RRR = GUIDELINE

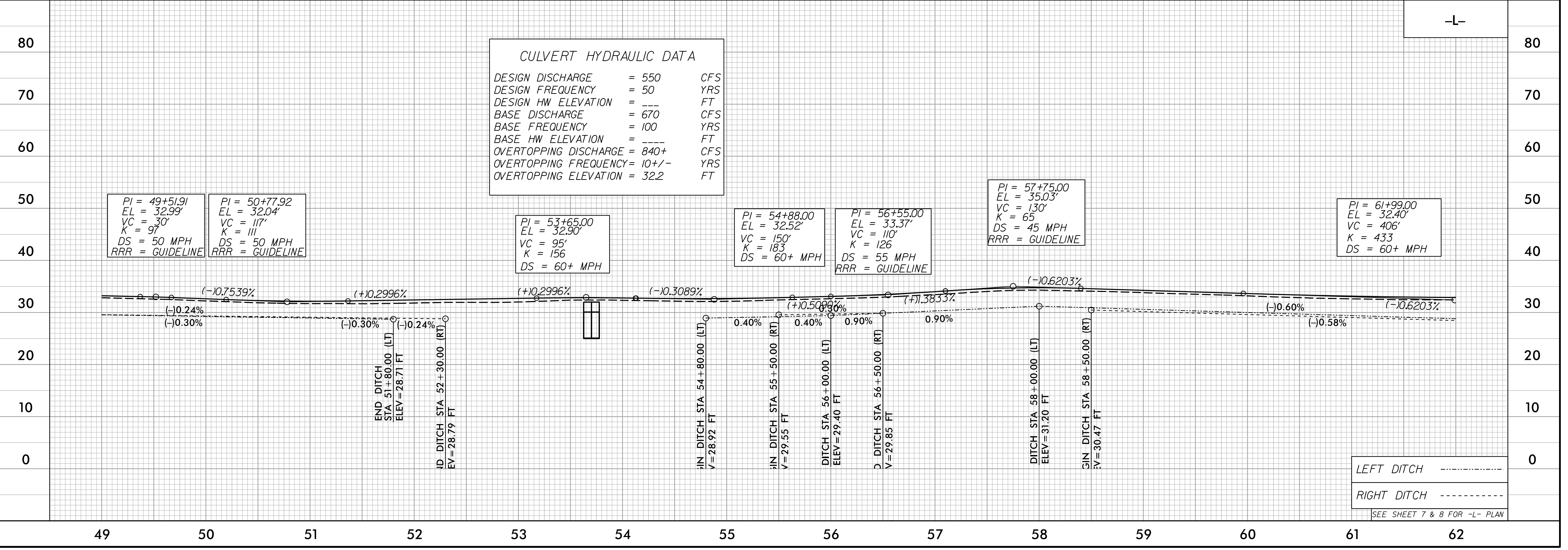
PI = 53+65.00
EL = 32.90'
VC = 95'
K = 156
DS = 60+ MPH

PI = 54+88.00
EL = 32.52'
VC = 150'
K = 183
DS = 60+ MPH

PI = 56+55.00
EL = 33.37'
VC = 110'
K = 126
DS = 55 MPH
RRR = GUIDELINE

PI = 57+75.00
EL = 35.03'
VC = 130'
K = 65
DS = 45 MPH
RRR = GUIDELINE

PI = 61+99.00
EL = 32.40'
VC = 406'
K = 433
DS = 60+ MPH



LEFT DITCH -----
RIGHT DITCH -----

SEE SHEET 7 & 8 FOR -L- PLAN

3/16/2022 R4705_Rdy_psh_45_PFL.dgn
JUS:RBM

PIPE HYDRAULIC DATA
30" RCP IV Sta.62+50

DRAINAGE AREA	= 13.8	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 23	CFS
DESIGN HW ELEVATION	= 30.8	FT
100 YEAR DISCHARGE	= 26	CFS
100 YEAR HW ELEVATION	= 31.0	FT
OVERTOPPING FREQUENCY	= 500+/-	YRS
OVERTOPPING DISCHARGE	= 43	CFS
OVERTOPPING ELEVATION	= 32.9	FT

PIPE HYDRAULIC DATA
48" RCP IV Sta.64+06

DRAINAGE AREA	= 64	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 80	CFS
DESIGN HW ELEVATION	= 32.6	FT
100 YEAR DISCHARGE	= 96	CFS
100 YEAR HW ELEVATION	= 33.5	FT
OVERTOPPING FREQUENCY	= 100	YRS
OVERTOPPING DISCHARGE	= 84	CFS
OVERTOPPING ELEVATION	= 32.9	FT

BMI2
-L- STA. 64+32.30, 105.79 RT. EL=32.04
RR SPIKE IN PP

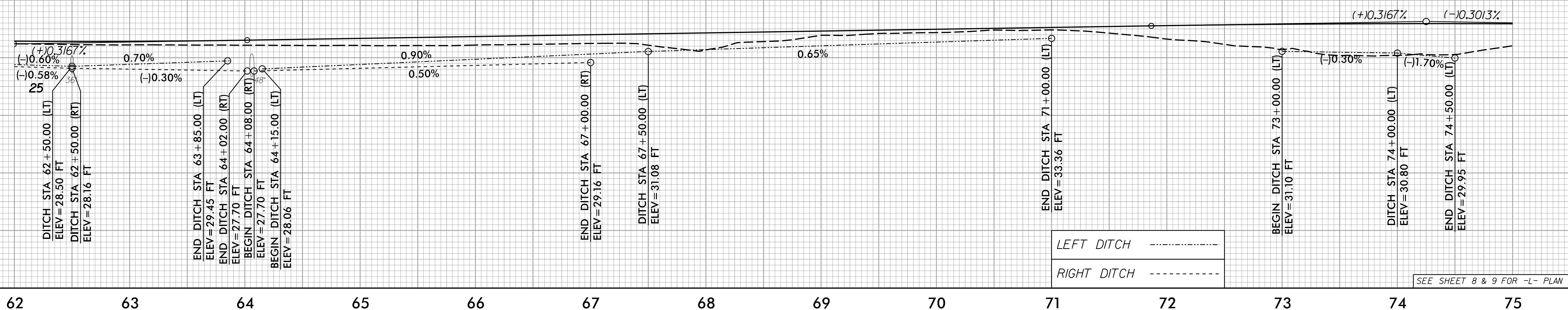
WETHERILL ENGINEERING
1223 Jones Franklin Rd.
Raleigh, N.C. 27606
License No. F-0377
Bus: 919 851 8077
Fax: 919 851 8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

PROJECT REFERENCE NO.	R-4705	SHEET NO.	46
ROADWAY DESIGN ENGINEER	4/7/2022	HYDRAULICS ENGINEER	4/7/2022
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

PI = 61+99.00
EL = 32.40'
VC = 406'
K = 433
DS = 60+ MPH

PI = 74+25.00
EL = 36.28'
VC = 477'
K = 772
DS = 60+ MPH



PIPE HYDRAULIC DATA
30" RCP III Sta.76+77

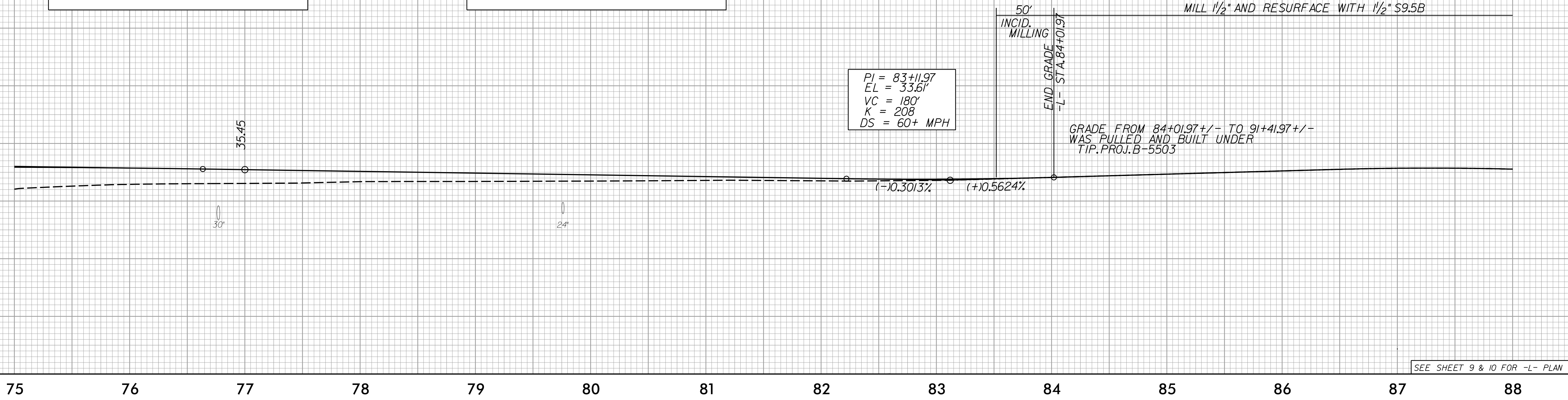
DRAINAGE AREA	= 12	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 19	CFS
DESIGN HW ELEVATION	= 29.3	FT
100 YEAR DISCHARGE	= 21	CFS
100 YEAR HW ELEVATION	= 29.5	FT
OVERTOPPING FREQUENCY	= 500+/-	YRS
OVERTOPPING DISCHARGE	= 39	CFS
OVERTOPPING ELEVATION	= 31.6	FT

PIPE HYDRAULIC DATA
24" RCP III Sta.79+76

DRAINAGE AREA	= 2	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 3.1	CFS
DESIGN HW ELEVATION	= 29.7	FT
100 YEAR DISCHARGE	= 3.3	CFS
100 YEAR HW ELEVATION	= 29.8	FT
OVERTOPPING FREQUENCY	= 500+/-	YRS
OVERTOPPING DISCHARGE	= 5.3	CFS
OVERTOPPING ELEVATION	= 30.0	FT

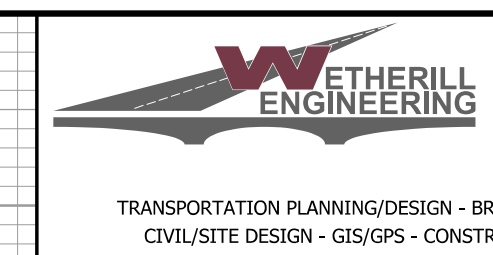
BMI3
-L- STA. 86+53.83, 86.85 RT. EL=32.06
RR SPIKE IN 30" PINE

PI = 83+11.97
EL = 33.61'
VC = 180'
K = 208
DS = 60+ MPH



SEE SHEET 9 & 10 FOR -L- PLAN

5/28/99

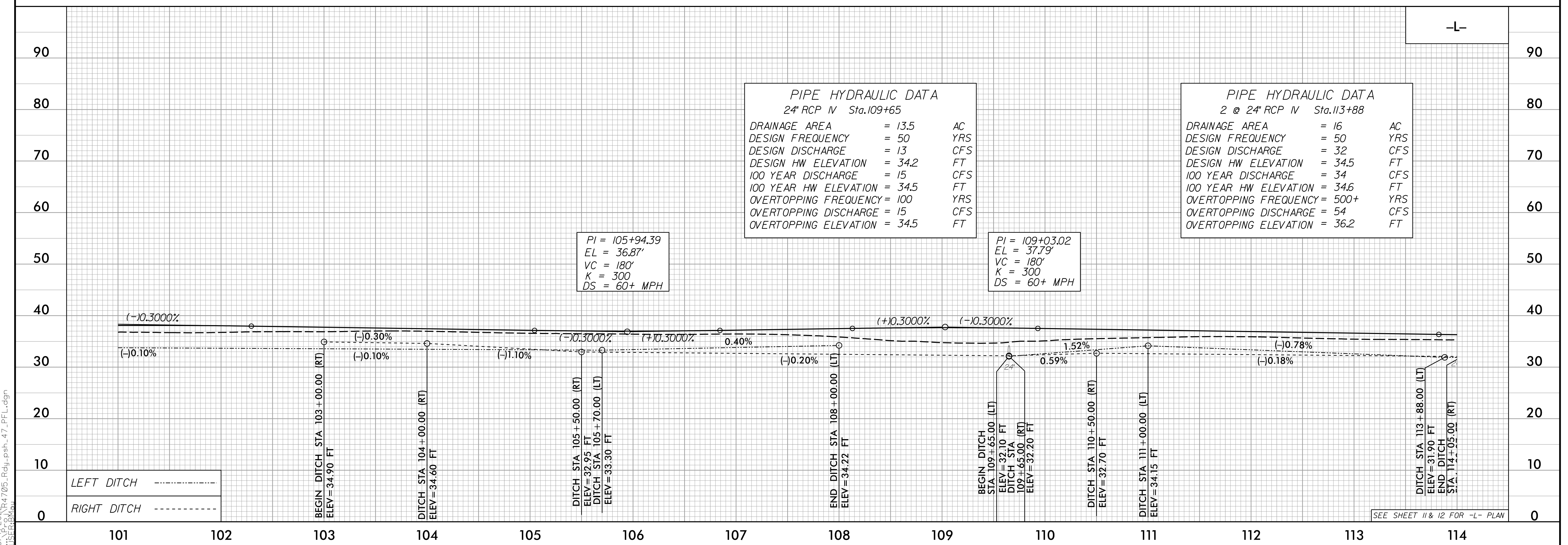
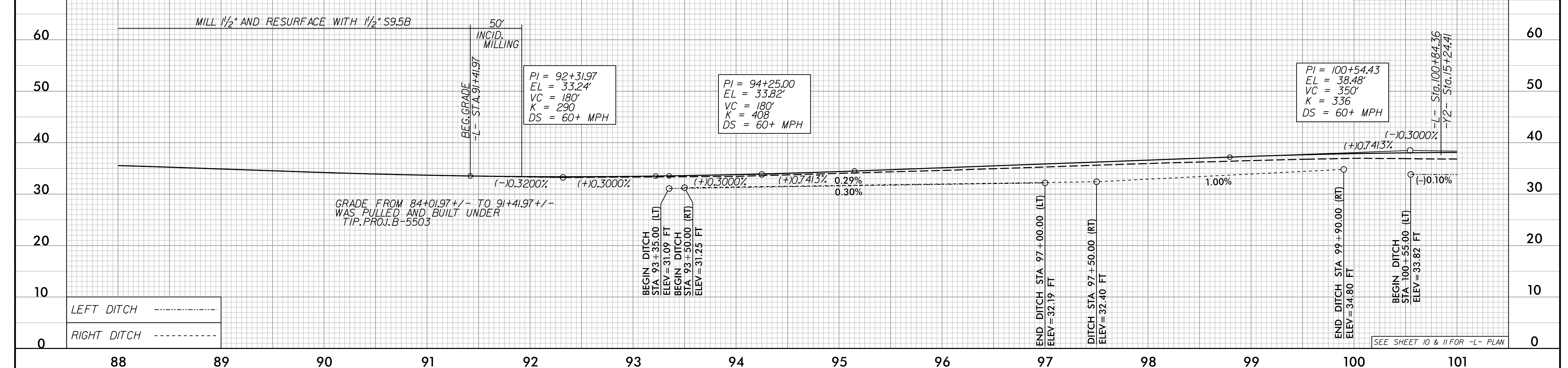


1223 Jones Franklin Rd.
Raleigh, N.C. 27606
License No. F-0377
Bus: 919 851 8077
Fax: 919 851 8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

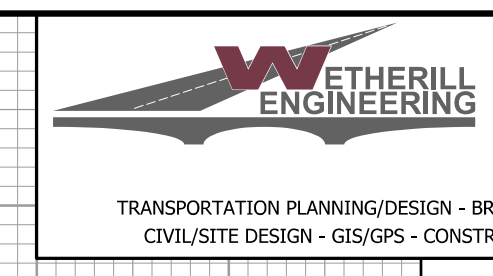
PROJECT REFERENCE NO. R-4705	SHEET NO. 47
ROADWAY DESIGN ENGINEER 4/7/2022	HYDRAULICS ENGINEER 4/7/2022

**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**



3/7/2022 R4705_Rdy_psh_47_PFL.dgn
USER:RDM

5/28/99



1223 Jones Franklin Rd.
Raleigh, N.C. 27606
License No. F-0377
Bus: 919 851 8077
Fax: 919 851 8107

PROJECT REFERENCE NO. R-4705		SHEET NO. 48
ROADWAY DESIGN ENGINEER 4/7/2022	HYDRAULICS ENGINEER 4/7/2022	

PIPE HYDRAULIC DATA
2 @ 24" RCP IV Sta.115+05

DRAINAGE AREA = 42 AC
DESIGN FREQUENCY = 50 YRS
DESIGN DISCHARGE = 28 CFS
DESIGN HW ELEVATION = 34.0 FT
100 YEAR DISCHARGE = 32 CFS
100 YEAR HW ELEVATION = 34.3 FT
OVERTOPPING FREQUENCY = 500+ YRS
OVERTOPPING DISCHARGE = 54 CFS
OVERTOPPING ELEVATION = 36.2 FT

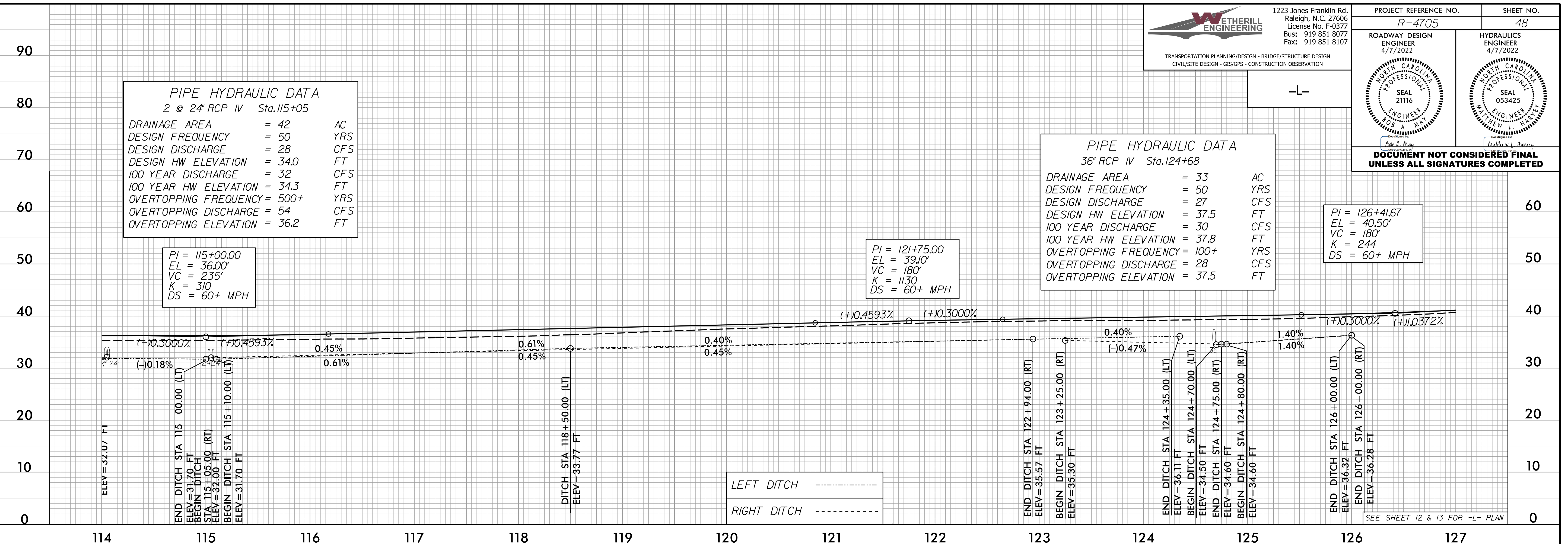
PIPE HYDRAULIC DATA
36" RCP IV Sta.124+68

DRAINAGE AREA = 33 AC
DESIGN FREQUENCY = 50 YRS
DESIGN DISCHARGE = 27 CFS
DESIGN HW ELEVATION = 37.5 FT
100 YEAR DISCHARGE = 30 CFS
100 YEAR HW ELEVATION = 37.8 FT
OVERTOPPING FREQUENCY = 100+ YRS
OVERTOPPING DISCHARGE = 28 CFS
OVERTOPPING ELEVATION = 37.5 FT

PI = 126+41.67
EL = 40.50'
VC = 180'
K = 244
DS = 60+ MPH

PI = 115+00.00
EL = 36.00'
VC = 235'
K = 310
DS = 60+ MPH

PI = 121+75.00
EL = 39.10'
VC = 180'
K = 1130
DS = 60+ MPH



LEFT DITCH -----
RIGHT DITCH -----

SEE SHEET 12 & 13 FOR -L- PLAN

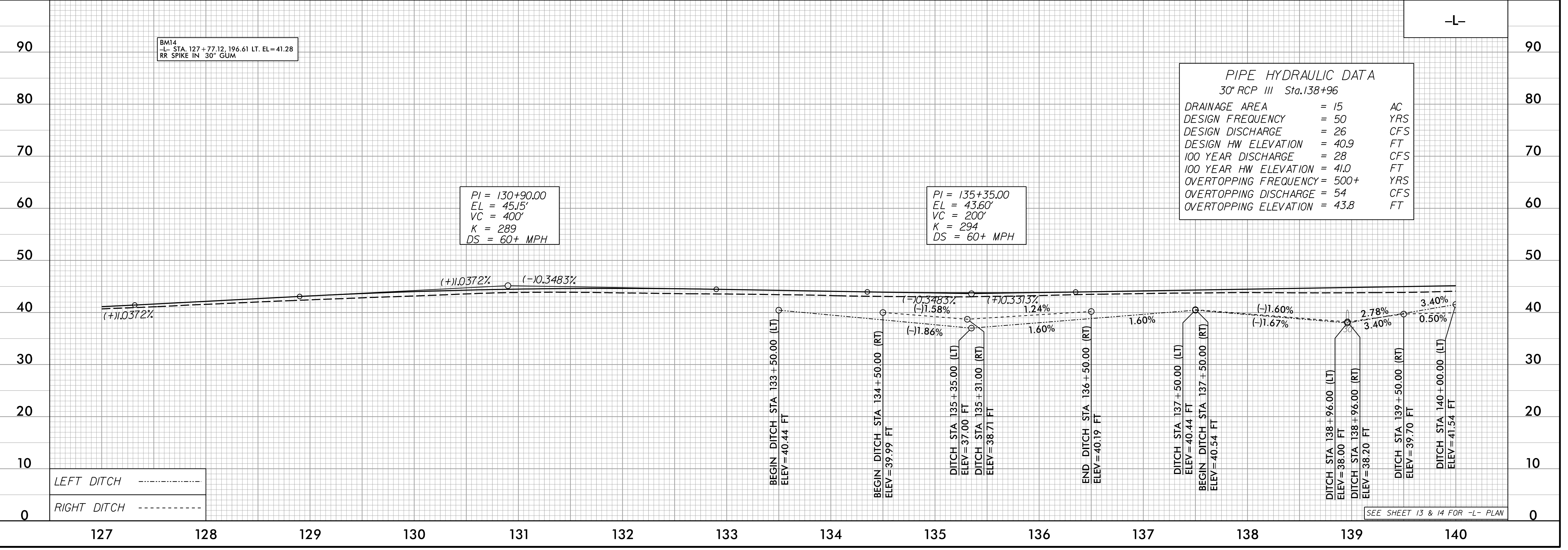
BMI4
-L- STA. 127+77.12, 196.61 LT. EL=41.28
RR SPIKE IN 30" GUM

PI = 130+90.00
EL = 45.15'
VC = 400'
K = 289
DS = 60+ MPH

PI = 135+35.00
EL = 43.60'
VC = 200'
K = 294
DS = 60+ MPH

PIPE HYDRAULIC DATA
30" RCP III Sta.138+96

DRAINAGE AREA = 15 AC
DESIGN FREQUENCY = 50 YRS
DESIGN DISCHARGE = 26 CFS
DESIGN HW ELEVATION = 40.9 FT
100 YEAR DISCHARGE = 28 CFS
100 YEAR HW ELEVATION = 41.0 FT
OVERTOPPING FREQUENCY = 500+ YRS
OVERTOPPING DISCHARGE = 54 CFS
OVERTOPPING ELEVATION = 43.8 FT

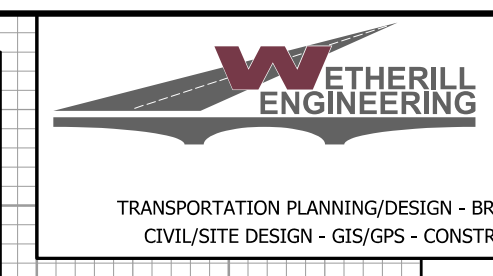


LEFT DITCH -----
RIGHT DITCH -----

SEE SHEET 13 & 14 FOR -L- PLAN

3/7/2022 R4705_Rdy_psh_48_PFL.dgn
11:58:30 AM

5/28/22



1223 Jones Franklin Rd.
Raleigh, N.C. 27606
License No. F-0377
Bus: 919 851 8077
Fax: 919 851 8107

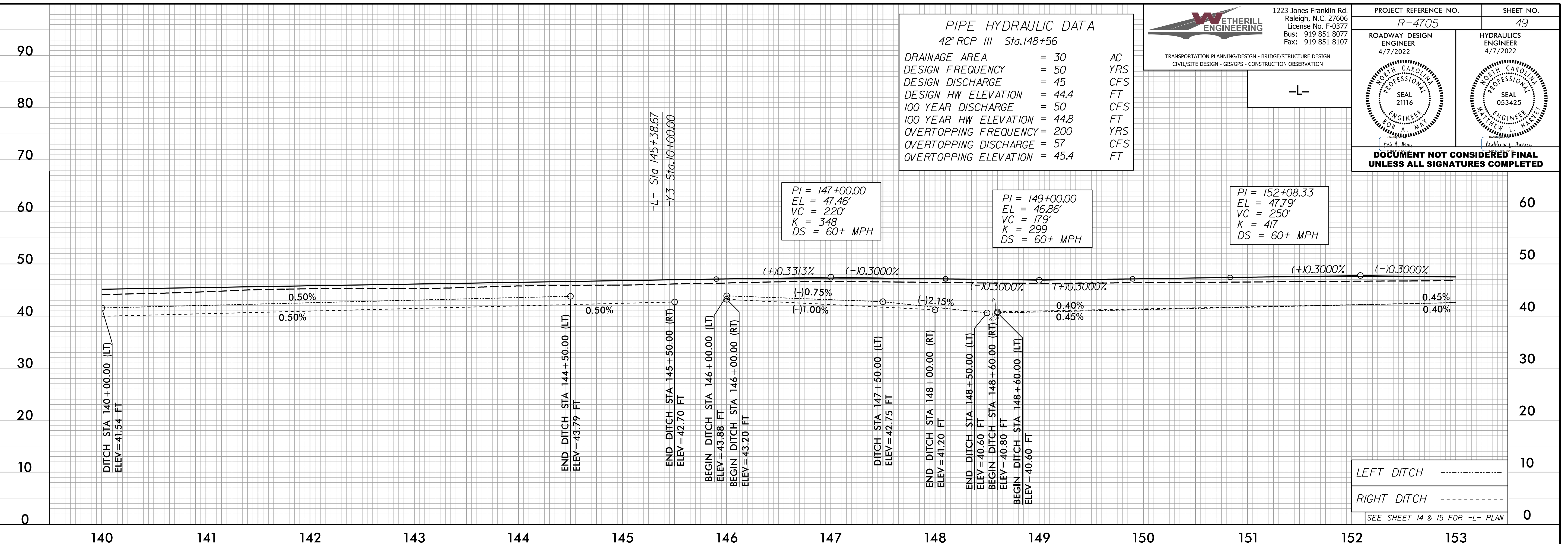
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

PROJECT REFERENCE NO. R-4705	SHEET NO. 49
ROADWAY DESIGN ENGINEER 4/7/2022	HYDRAULICS ENGINEER 4/7/2022

**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**

PIPE HYDRAULIC DATA
42" RCP III Sta.148+56

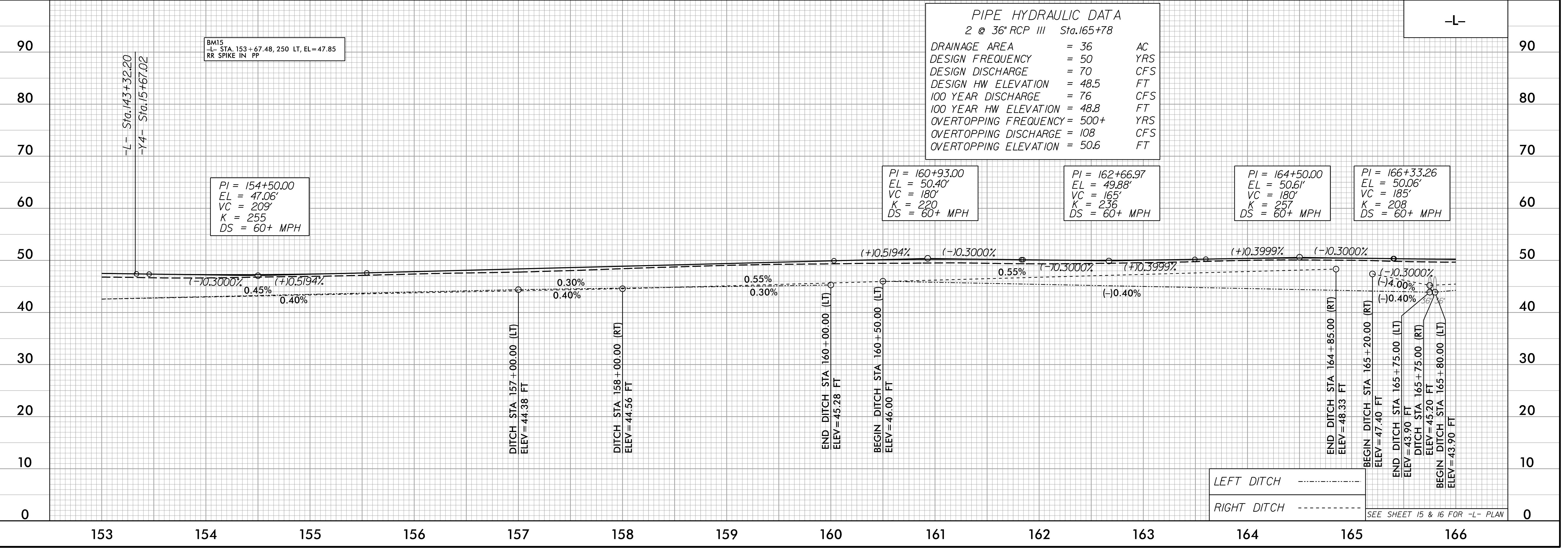
DRAINAGE AREA	= 30	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 45	CFS
DESIGN HW ELEVATION	= 44.4	FT
100 YEAR DISCHARGE	= 50	CFS
100 YEAR HW ELEVATION	= 44.8	FT
OVERTOPPING FREQUENCY	= 200	YRS
OVERTOPPING DISCHARGE	= 57	CFS
OVERTOPPING ELEVATION	= 45.4	FT



LEFT DITCH -----
RIGHT DITCH -----
SEE SHEET 14 & 15 FOR -L- PLAN

PIPE HYDRAULIC DATA
2 @ 36" RCP III Sta.165+78

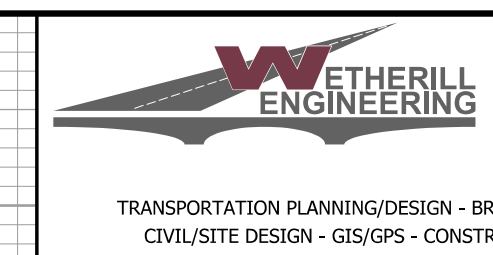
DRAINAGE AREA	= 36	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 70	CFS
DESIGN HW ELEVATION	= 48.5	FT
100 YEAR DISCHARGE	= 76	CFS
100 YEAR HW ELEVATION	= 48.8	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 108	CFS
OVERTOPPING ELEVATION	= 50.6	FT



LEFT DITCH -----
RIGHT DITCH -----
SEE SHEET 15 & 16 FOR -L- PLAN

3/16/2022 R4705_Rdy_psh_49_PFL.dgn
11:58:30 AM

5/28/22

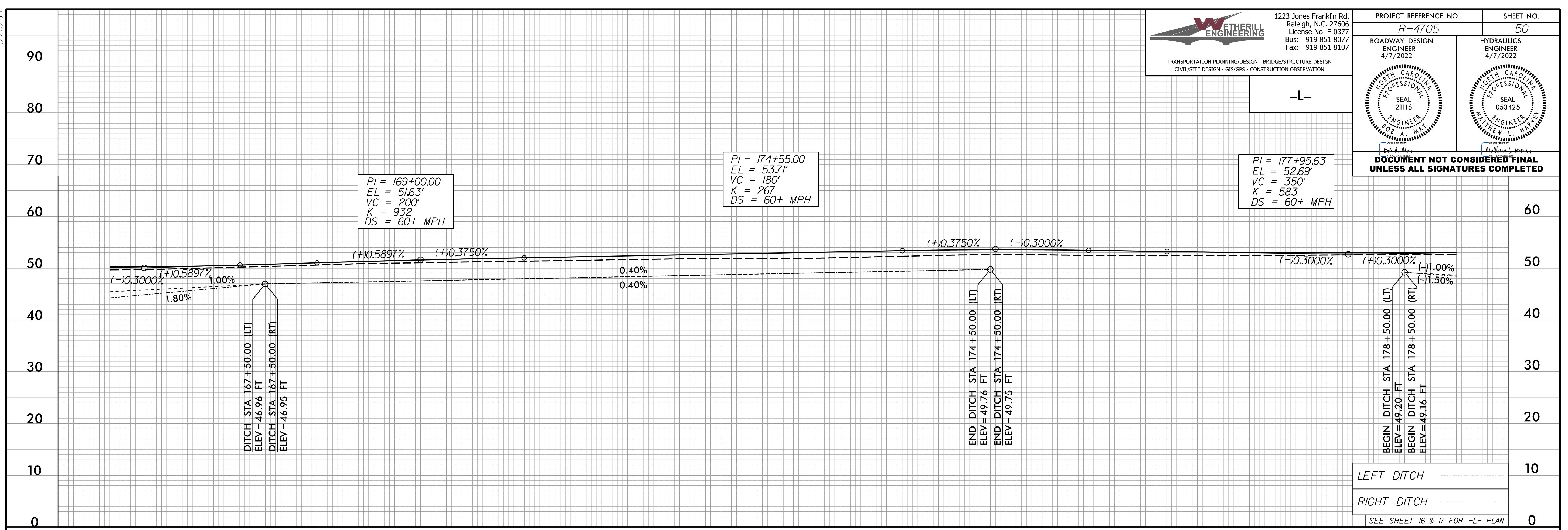


1223 Jones Franklin Rd.
Raleigh, N.C. 27606
License No. F-0377
Bus: 919 851 8077
Fax: 919 851 8107

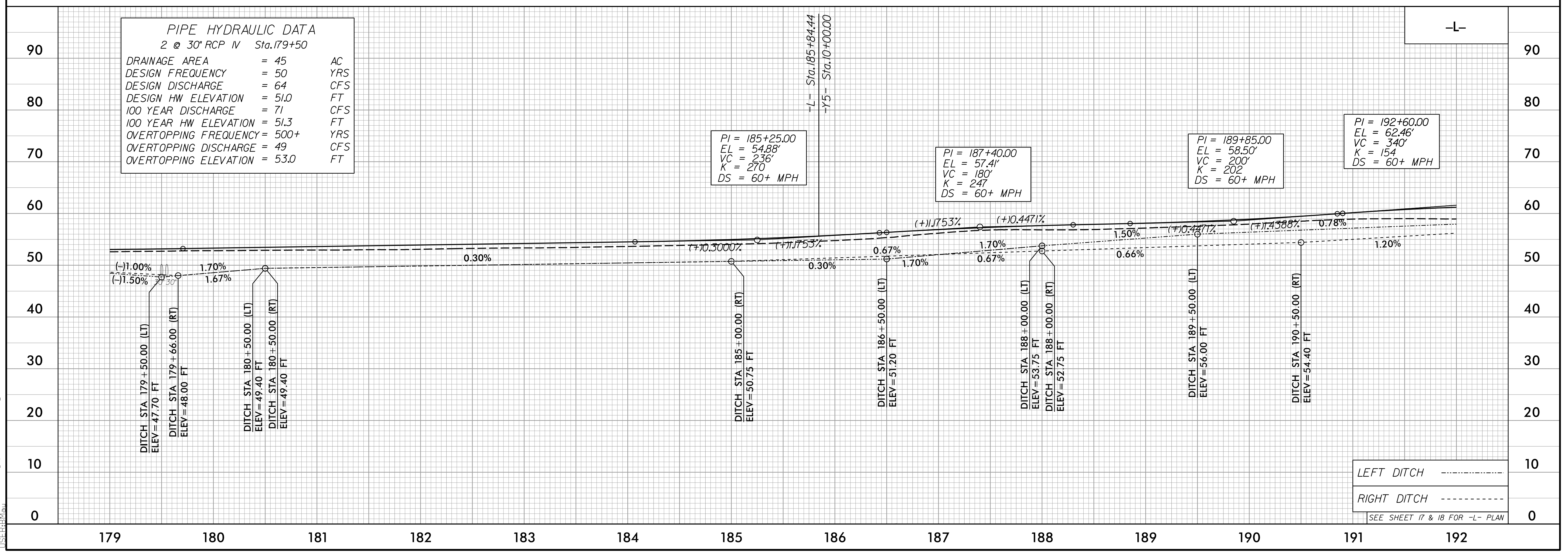
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

PROJECT REFERENCE NO. R-4705	SHEET NO. 50
ROADWAY DESIGN ENGINEER 4/7/2022 	HYDRAULICS ENGINEER 4/7/2022

**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**



LEFT DITCH -----
RIGHT DITCH -----
SEE SHEET 16 & 17 FOR -L- PLAN



PIPE HYDRAULIC DATA
2 @ 30" RCP IV Sta. 179+50

DRAINAGE AREA	= 45	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 64	CFS
DESIGN HW ELEVATION	= 51.0	FT
100 YEAR DISCHARGE	= 71	CFS
100 YEAR HW ELEVATION	= 51.3	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 49	CFS
OVERTOPPING ELEVATION	= 53.0	FT

LEFT DITCH -----
RIGHT DITCH -----
SEE SHEET 17 & 18 FOR -L- PLAN

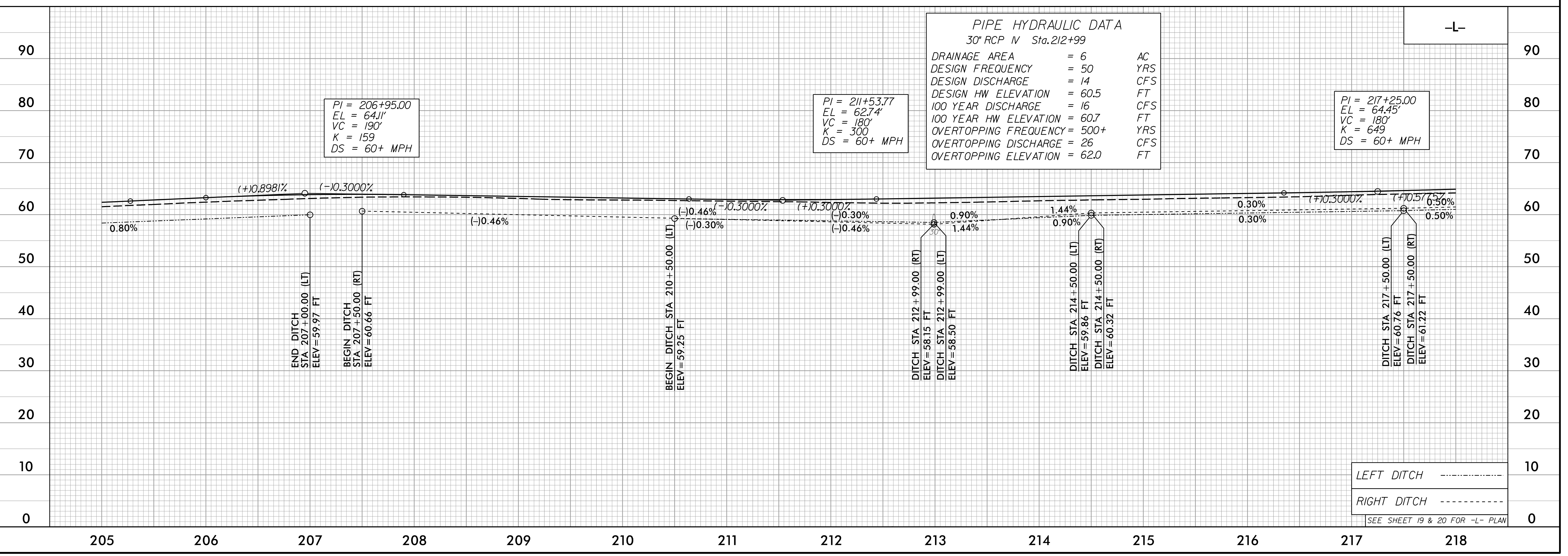
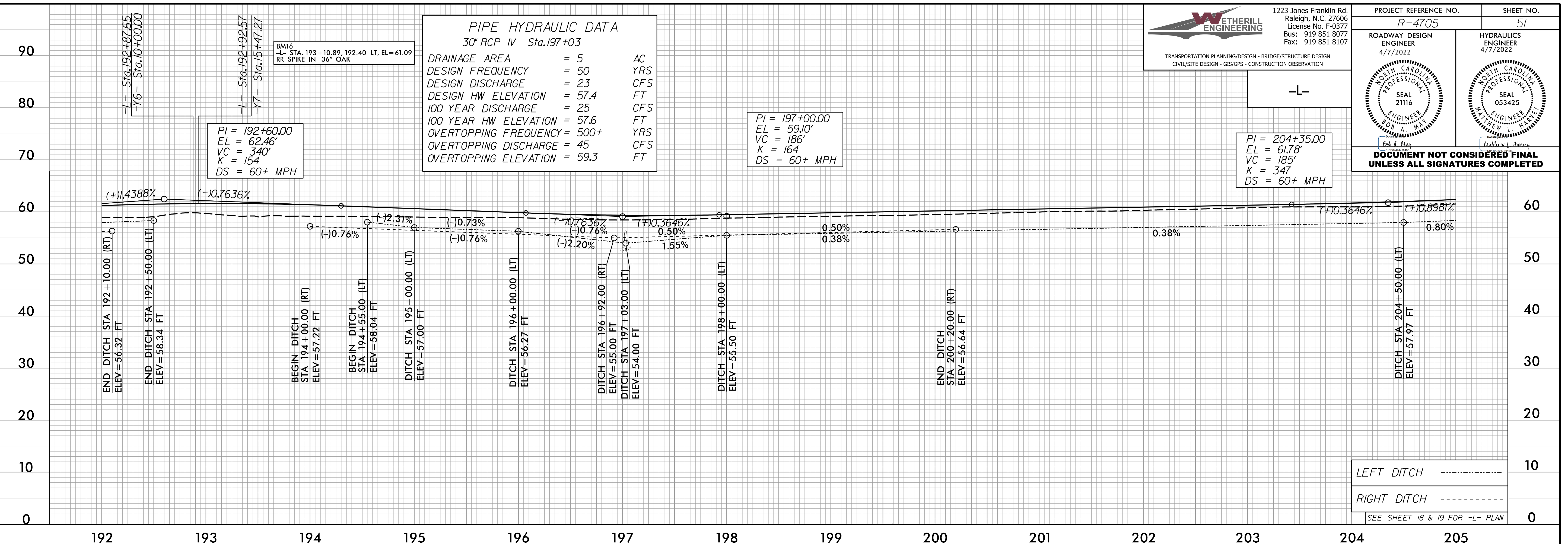
3/16/2022 R4705_Rdy_psh_50_PFL.dgn
JUSE@BAY

5/28/2022

WETHERILL ENGINEERING
 1223 Jones Franklin Rd.
 Raleigh, N.C. 27606
 License No. F-0377
 Bus: 919 851 8077
 Fax: 919 851 8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

PROJECT REFERENCE NO. R-4705	SHEET NO. 51
ROADWAY DESIGN ENGINEER 4/7/2022	HYDRAULICS ENGINEER 4/7/2022
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

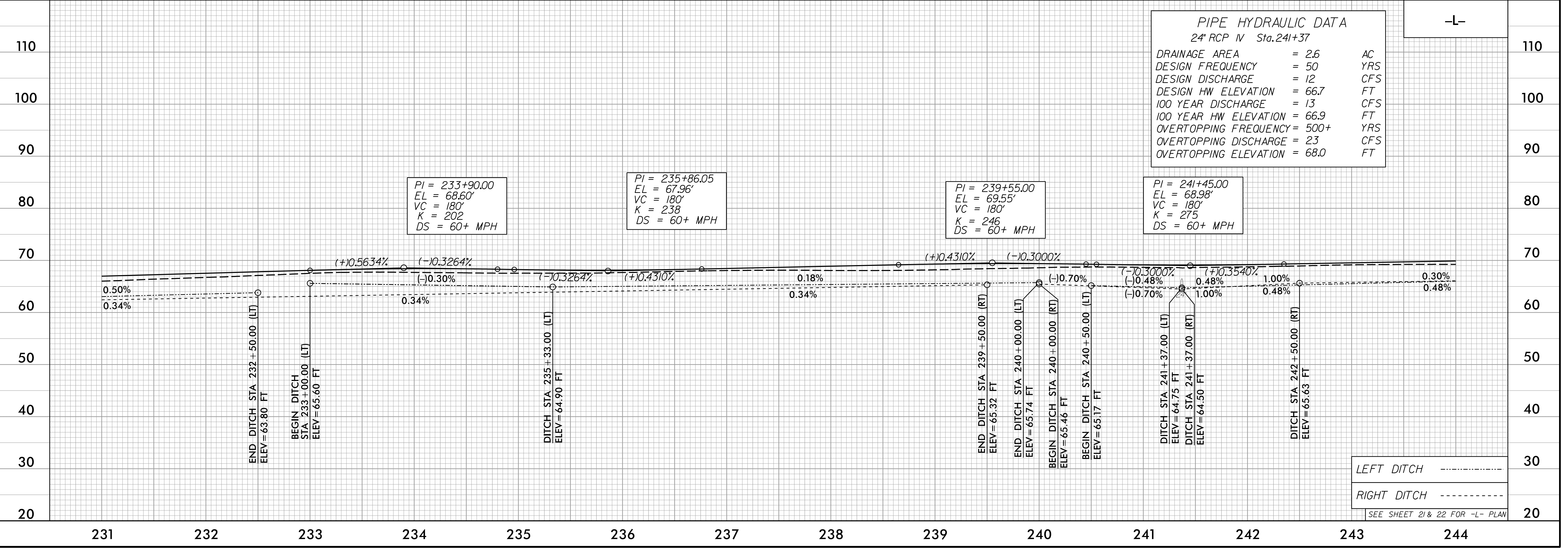
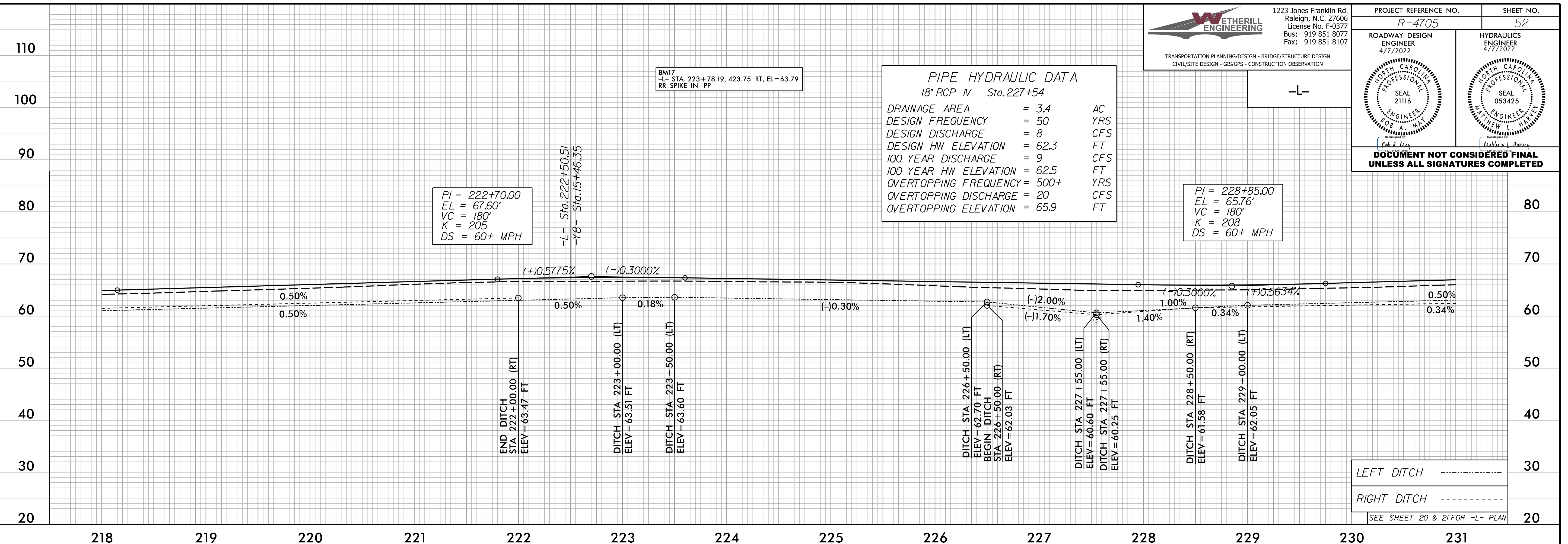


5/28/22

WETHERILL ENGINEERING
 1223 Jones Franklin Rd.
 Raleigh, N.C. 27606
 License No. F-0377
 Bus: 919 851 8077
 Fax: 919 851 8107

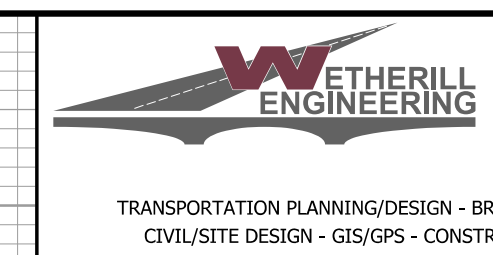
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

PROJECT REFERENCE NO. R-4705	SHEET NO. 52
ROADWAY DESIGN ENGINEER 4/7/2022 	HYDRAULICS ENGINEER 4/7/2022
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



3/7/2022 R4705_Rdy_psh_52_PFL.dgn
JUSE:RDM

5/28/99



1223 Jones Franklin Rd.
Raleigh, N.C. 27606
License No. F-0377
Bus: 919 851 8077
Fax: 919 851 8107

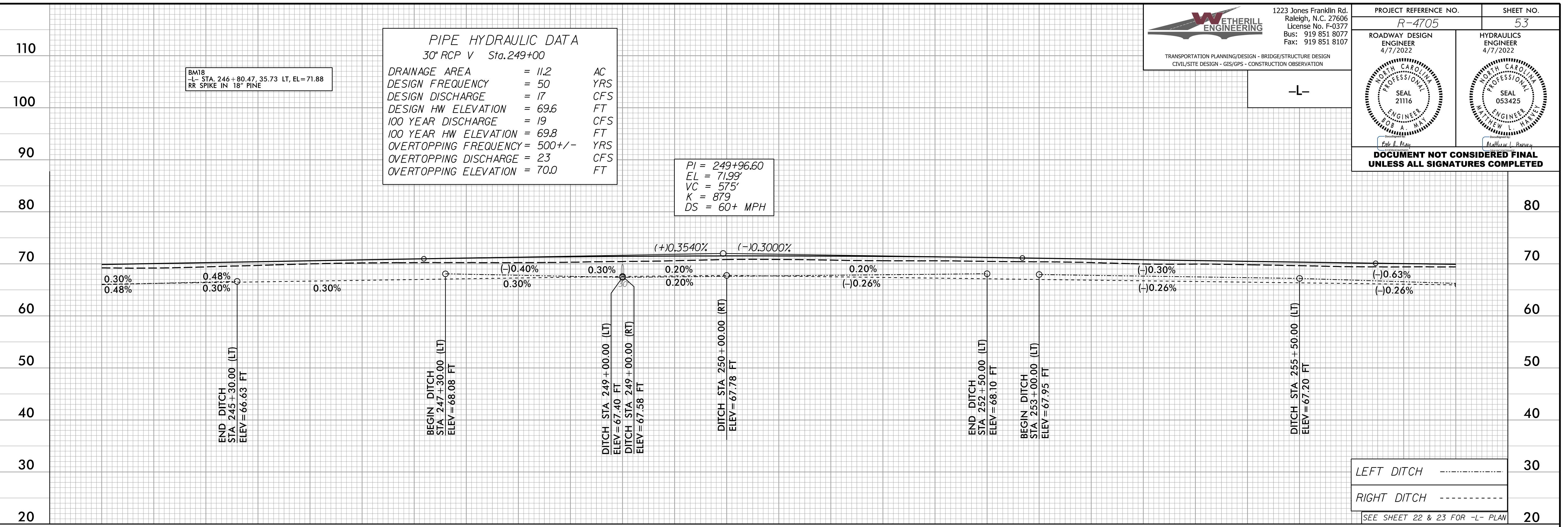
PROJECT REFERENCE NO. R-4705		SHEET NO. 53
ROADWAY DESIGN ENGINEER 4/7/2022	HYDRAULICS ENGINEER 4/7/2022	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		

PIPE HYDRAULIC DATA
30" RCP V Sta.249+00

DRAINAGE AREA	= 11.2	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 17	CFS
DESIGN HW ELEVATION	= 69.6	FT
100 YEAR DISCHARGE	= 19	CFS
100 YEAR HW ELEVATION	= 69.8	FT
OVERTOPPING FREQUENCY	= 500+/-	YRS
OVERTOPPING DISCHARGE	= 23	CFS
OVERTOPPING ELEVATION	= 70.0	FT

PI = 249+96.60
EL = 71.99'
VC = 575'
K = 879
DS = 60+ MPH

BM18
-L- STA. 246+80.47, 35.73 LT, EL=71.88
RR SPIKE IN 18" PINE



LEFT DITCH -----
RIGHT DITCH -----
SEE SHEET 22 & 23 FOR -L- PLAN

PIPE HYDRAULIC DATA
2 @ 18" RCP V Sta.257+05

DRAINAGE AREA	= 9	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 13	CFS
DESIGN HW ELEVATION	= 67.7	FT
100 YEAR DISCHARGE	= 15	CFS
100 YEAR HW ELEVATION	= 67.9	FT
OVERTOPPING FREQUENCY	= 200+	YRS
OVERTOPPING DISCHARGE	= 17	CFS
OVERTOPPING ELEVATION	= 70.5	FT

PIPE HYDRAULIC DATA
30" RCP IV Sta.267+15

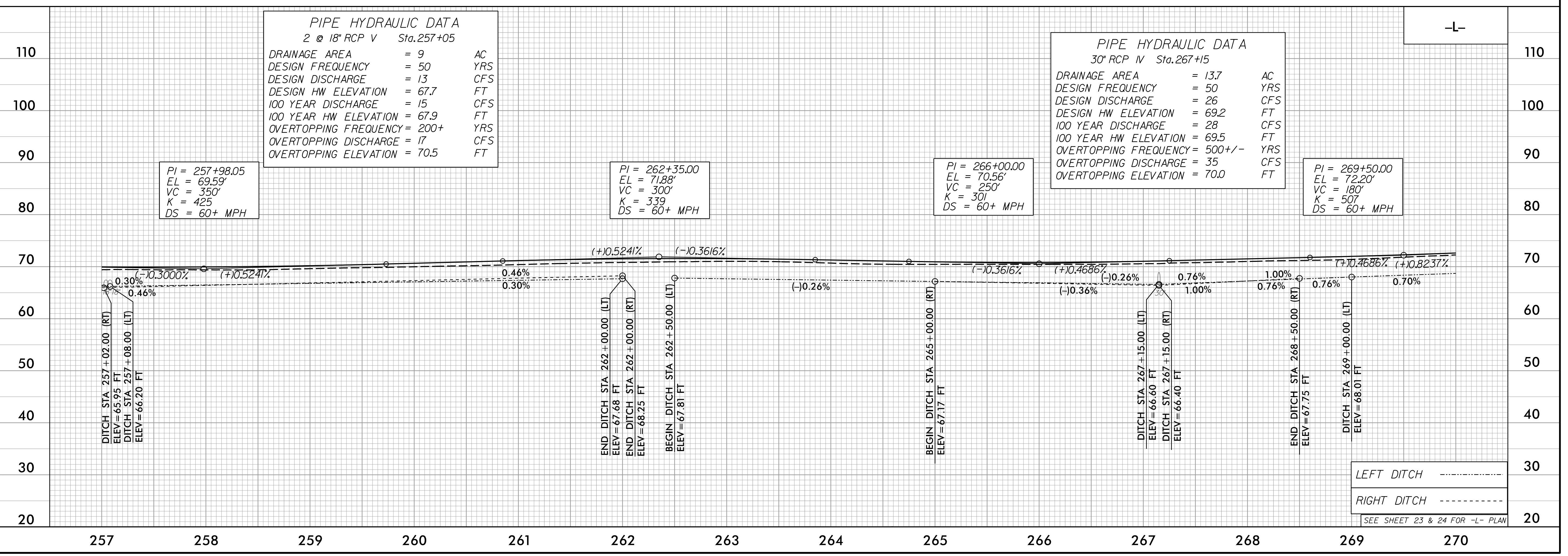
DRAINAGE AREA	= 13.7	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 26	CFS
DESIGN HW ELEVATION	= 69.2	FT
100 YEAR DISCHARGE	= 28	CFS
100 YEAR HW ELEVATION	= 69.5	FT
OVERTOPPING FREQUENCY	= 500+/-	YRS
OVERTOPPING DISCHARGE	= 35	CFS
OVERTOPPING ELEVATION	= 70.0	FT

PI = 257+98.05
EL = 69.59'
VC = 350'
K = 425
DS = 60+ MPH

PI = 262+35.00
EL = 71.88'
VC = 300'
K = 339
DS = 60+ MPH

PI = 266+00.00
EL = 70.56'
VC = 250'
K = 301
DS = 60+ MPH

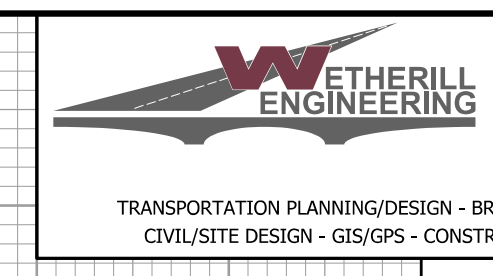
PI = 269+50.00
EL = 72.20'
VC = 180'
K = 507
DS = 60+ MPH



LEFT DITCH -----
RIGHT DITCH -----
SEE SHEET 23 & 24 FOR -L- PLAN

3/16/2022 R4705_Rdy_psh_53_PFL.dgn
1:55:58 PM

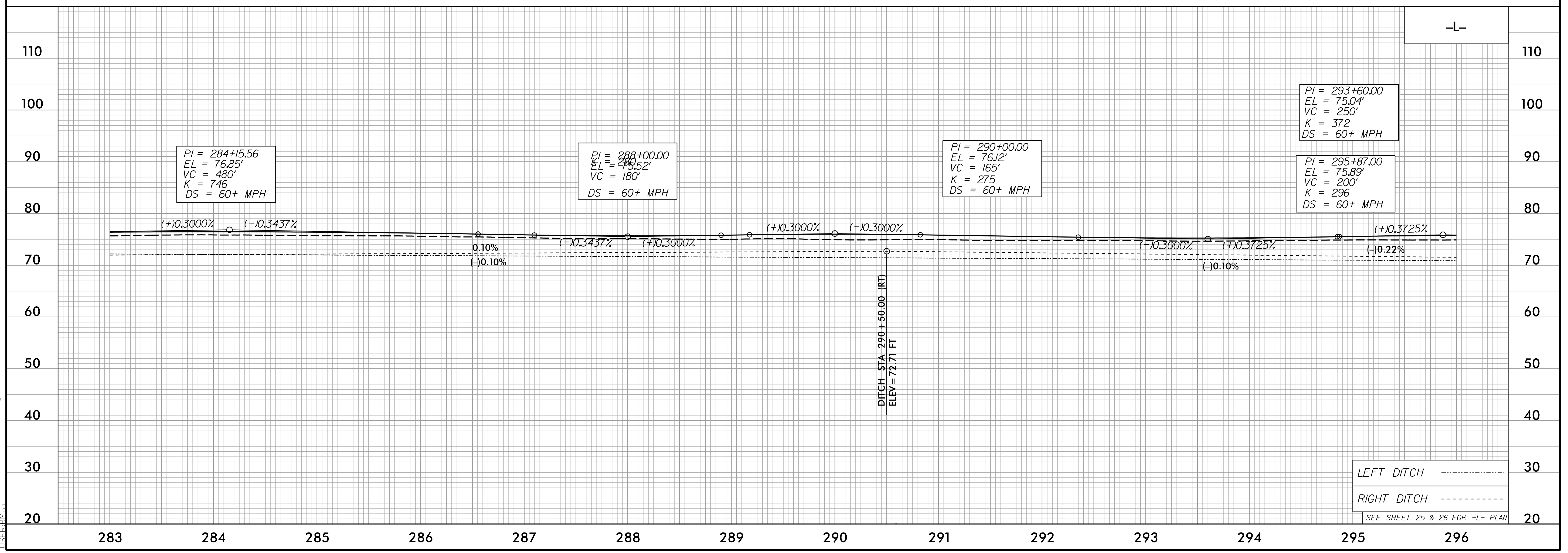
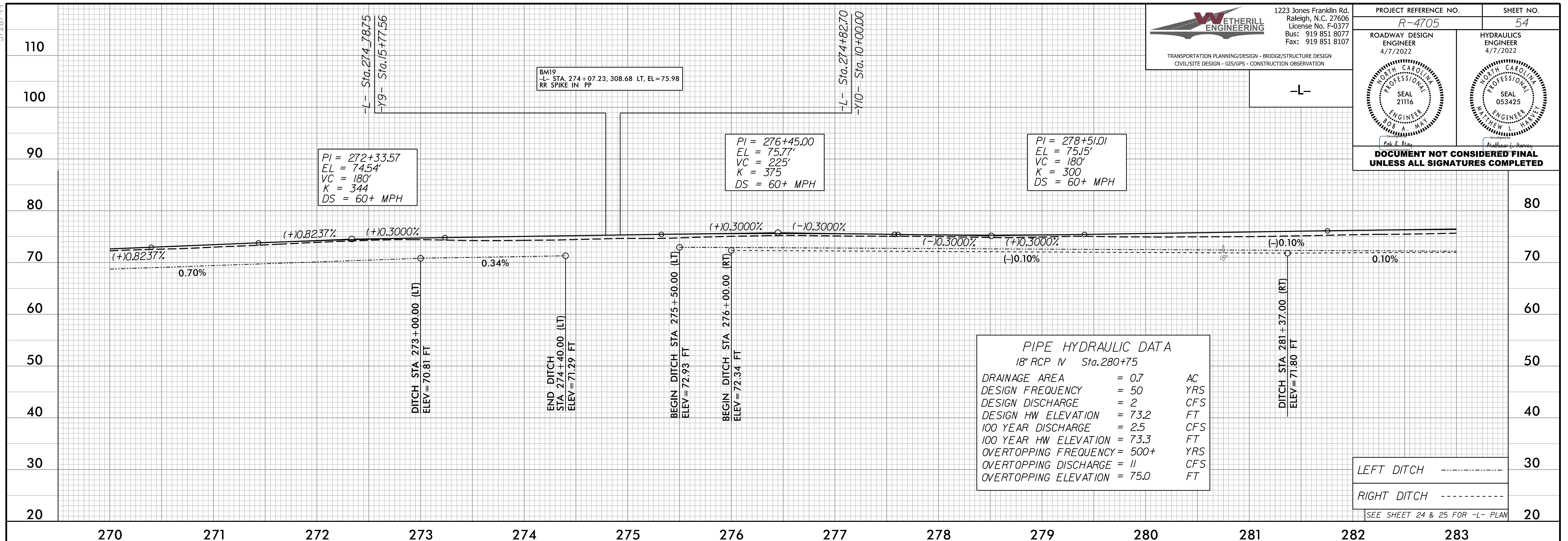
5/28/22



1223 Jones Franklin Rd.
Raleigh, N.C. 27606
License No. F-0377
Bus: 919 851 8077
Fax: 919 851 8107

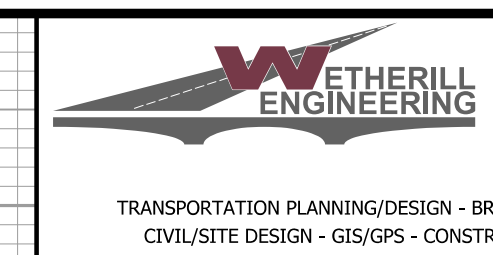
PROJECT REFERENCE NO. R-4705	SHEET NO. 54
ROADWAY DESIGN ENGINEER 4/7/2022	HYDRAULICS ENGINEER 4/7/2022

**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**



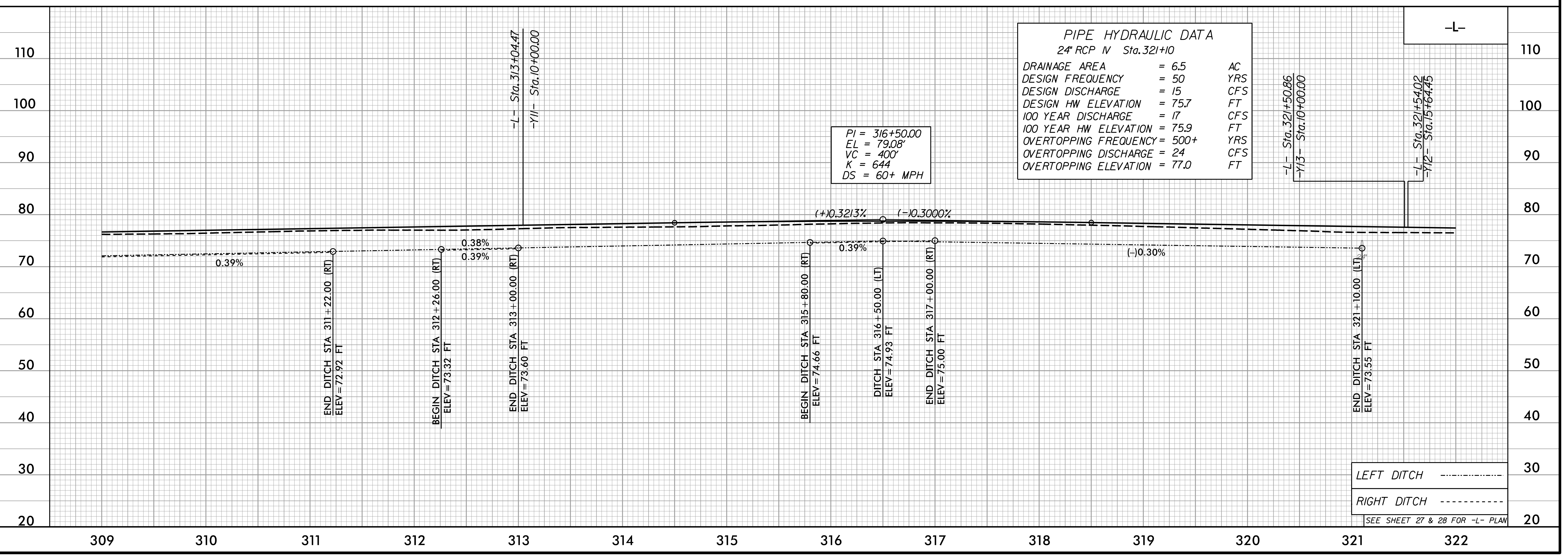
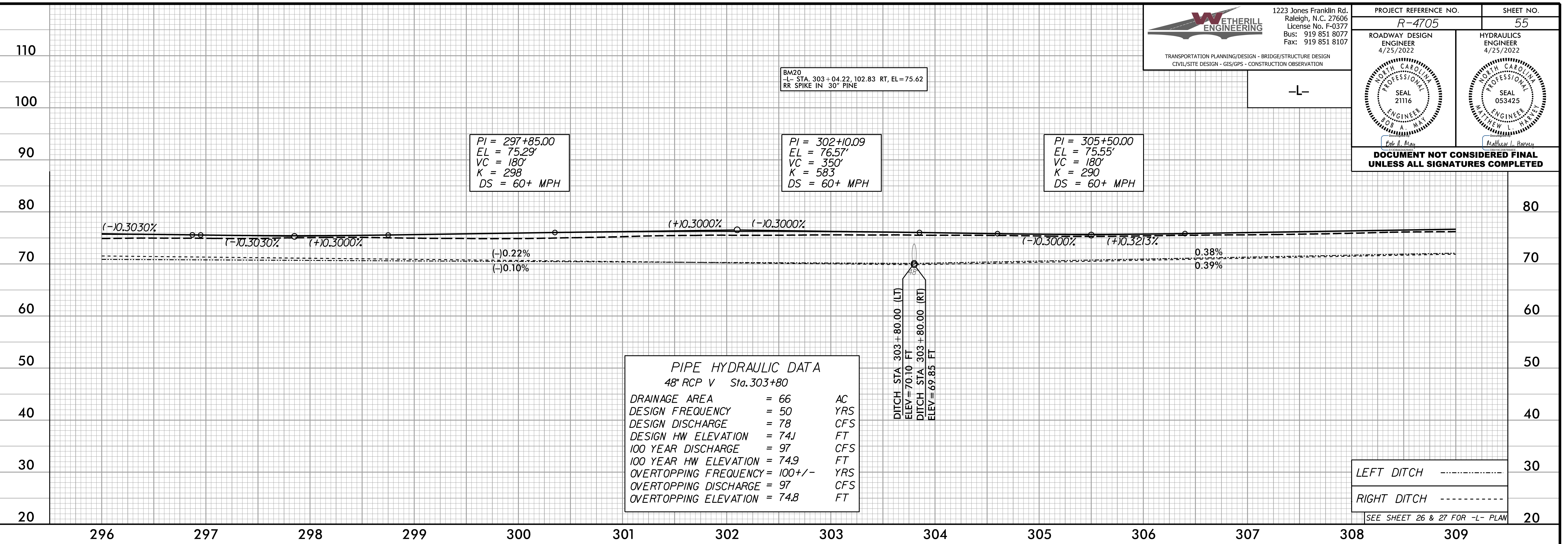
3/7/2022 R4705_Rdy_psh_54_PFL.dgn
11:51:38 AM

5/28/99



1223 Jones Franklin Rd.
Raleigh, N.C. 27606
License No. F-0377
Bus: 919 851 8077
Fax: 919 851 8107

PROJECT REFERENCE NO. R-4705	SHEET NO. 55
ROADWAY DESIGN ENGINEER 4/25/2022	HYDRAULICS ENGINEER 4/25/2022
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



4/25/2022 4:05 PM 4705_Rdy_psh_55_PFL.dgn

5/28/99

PIPE HYDRAULIC DATA
2 @ 36" RCP IV Sta. 324+95

DRAINAGE AREA	= 41	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 51	CFS
DESIGN HW ELEVATION	= 75.0	FT
100 YEAR DISCHARGE	= 57	CFS
100 YEAR HW ELEVATION	= 75.2	FT
OVERTOPPING FREQUENCY	= 10+	YRS
OVERTOPPING DISCHARGE	= 42	CFS
OVERTOPPING ELEVATION	= 74.6	FT

PI = 325+10.71
EL = 76.50'
VC = 400'
K = 667
DS = 60+ MPH

PI = 330+09.52
EL = 77.99'
VC = 225'
K = 375
DS = 60+ MPH

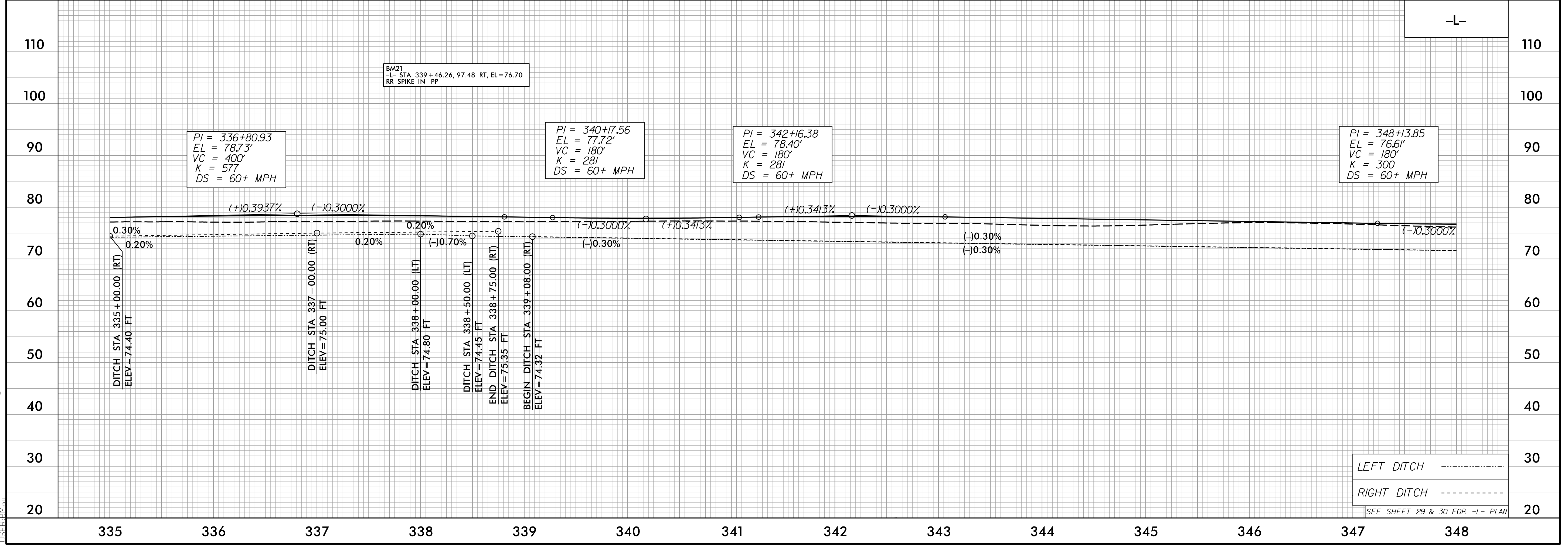
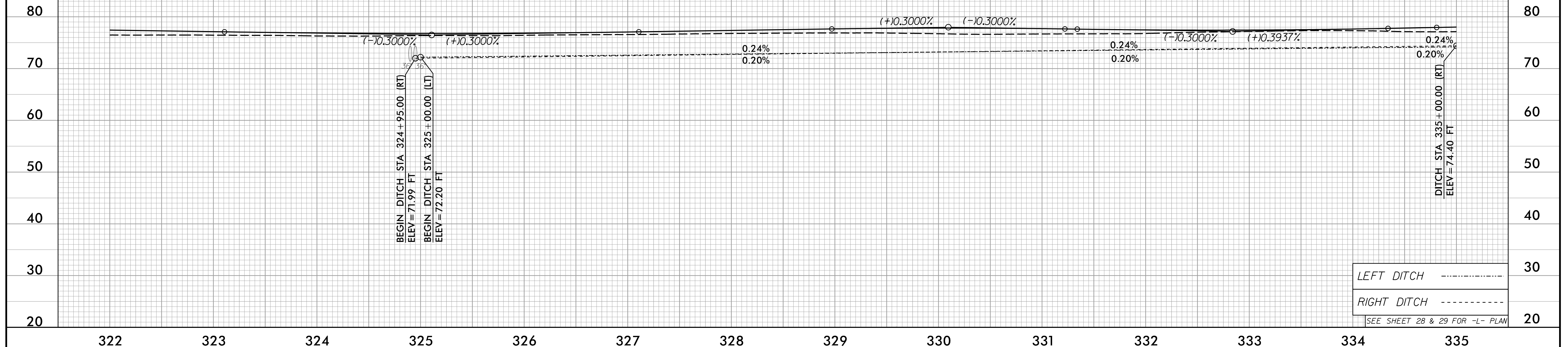
PI = 332+83.98
EL = 77.17'
VC = 300'
K = 432
DS = 60+ MPH

WETHERILL ENGINEERING
1223 Jones Franklin Rd.
Raleigh, N.C. 27606
License No. F-0377
Bus: 919 851 8077
Fax: 919 851 8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

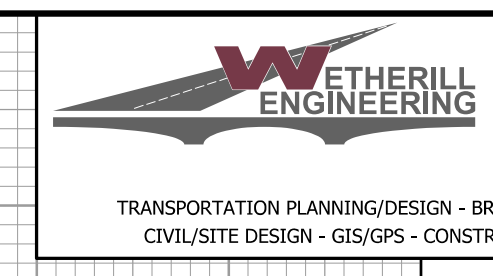
PROJECT REFERENCE NO.	R-4705	SHEET NO.	56
ROADWAY DESIGN ENGINEER	4/7/2022	HYDRAULICS ENGINEER	4/7/2022
SEAL 21116	BOB A. MAY	SEAL 053425	MATTHEW L. HARRIS

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



3/17/2022 R4705_Rdy_psh_56_PFL.dgn

5/28/22

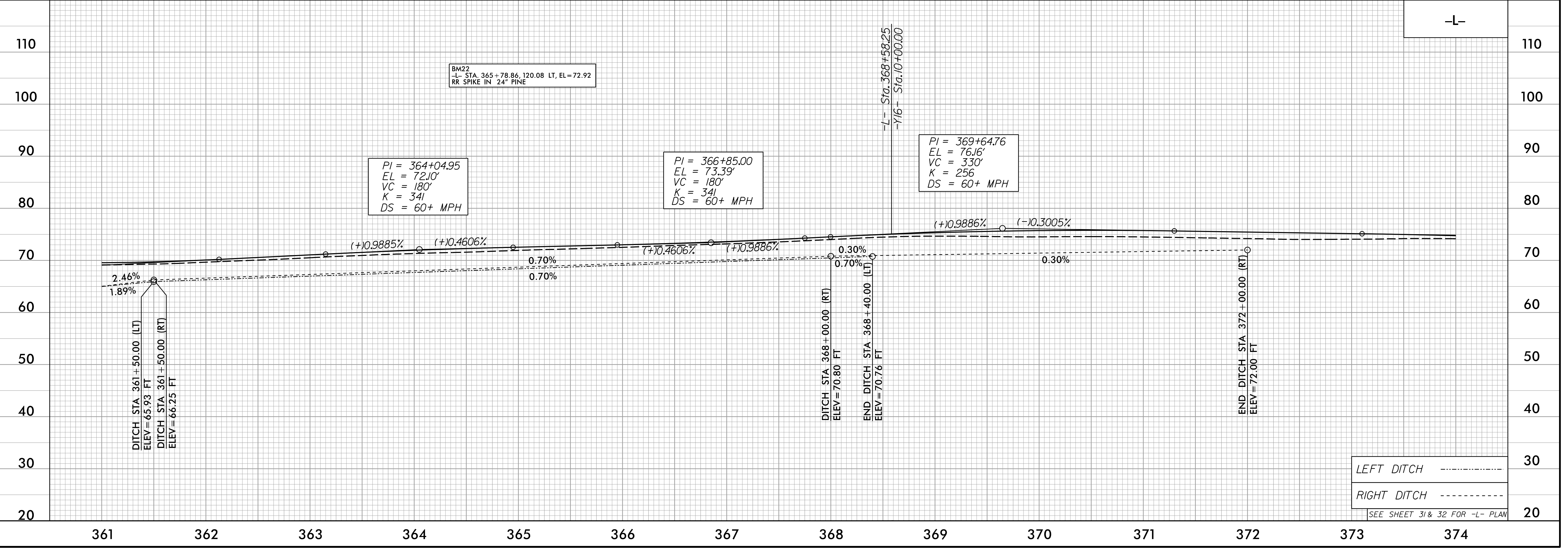
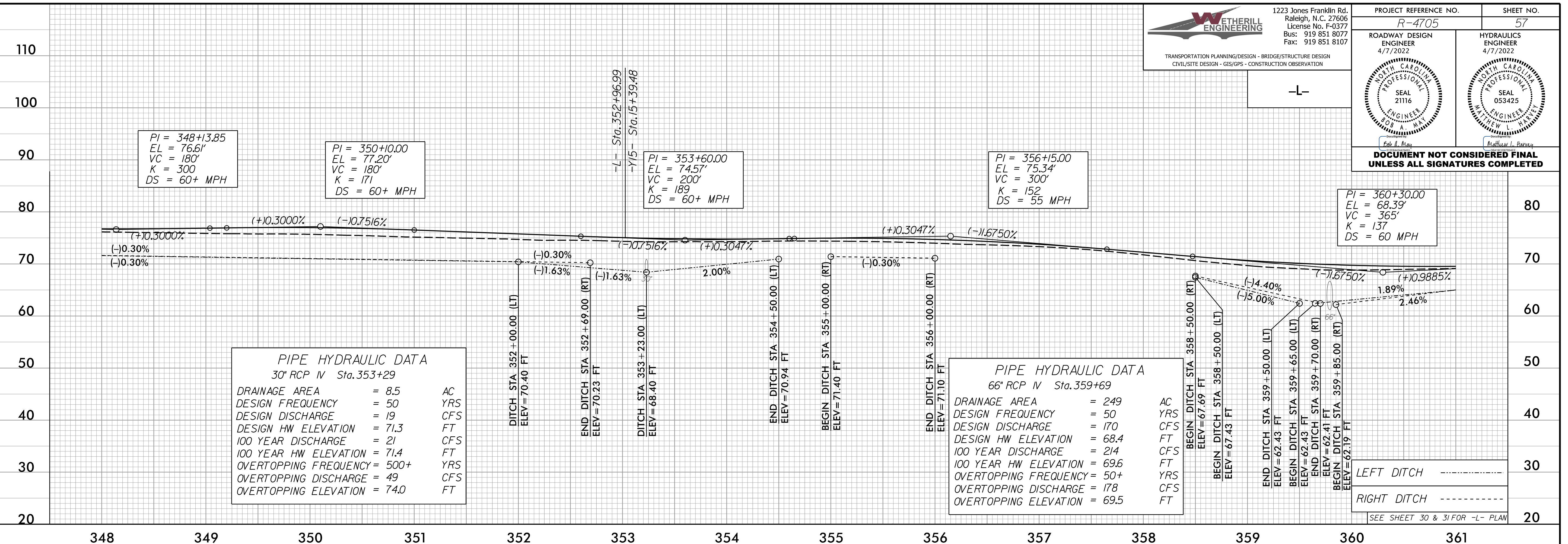


1223 Jones Franklin Rd.
Raleigh, N.C. 27606
License No. F-0377
Bus: 919 851 8077
Fax: 919 851 8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

PROJECT REFERENCE NO. R-4705	SHEET NO. 57
ROADWAY DESIGN ENGINEER 4/7/2022	HYDRAULICS ENGINEER 4/7/2022

**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**



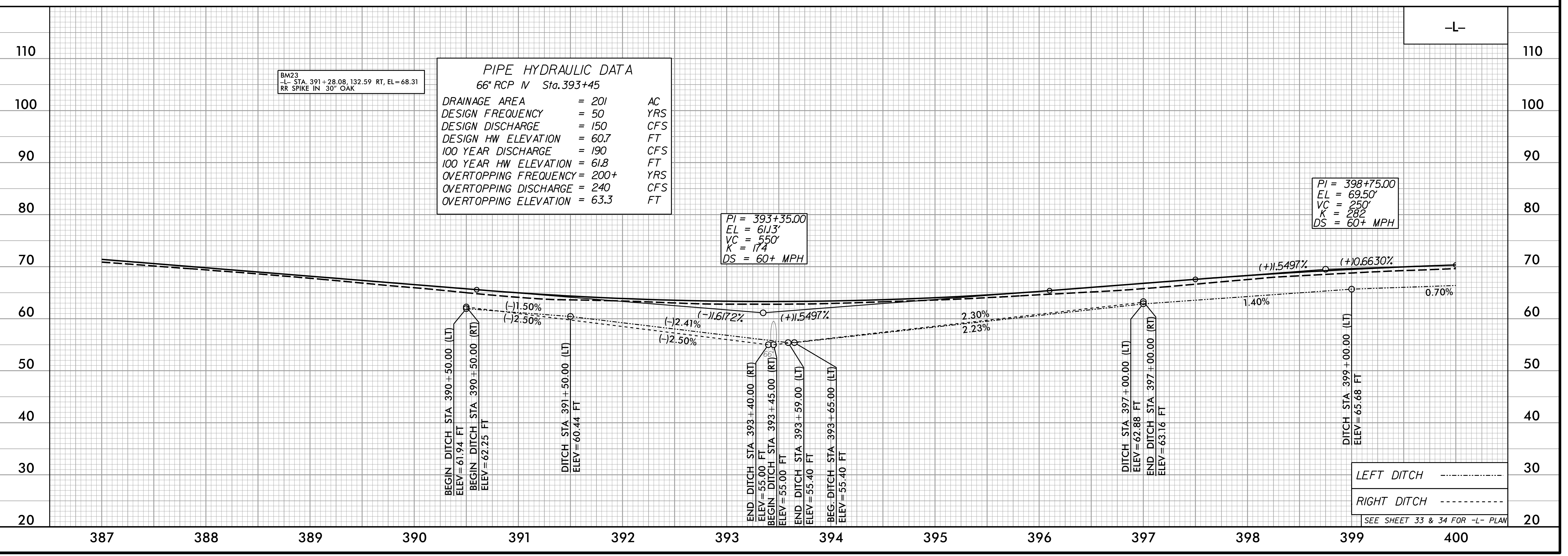
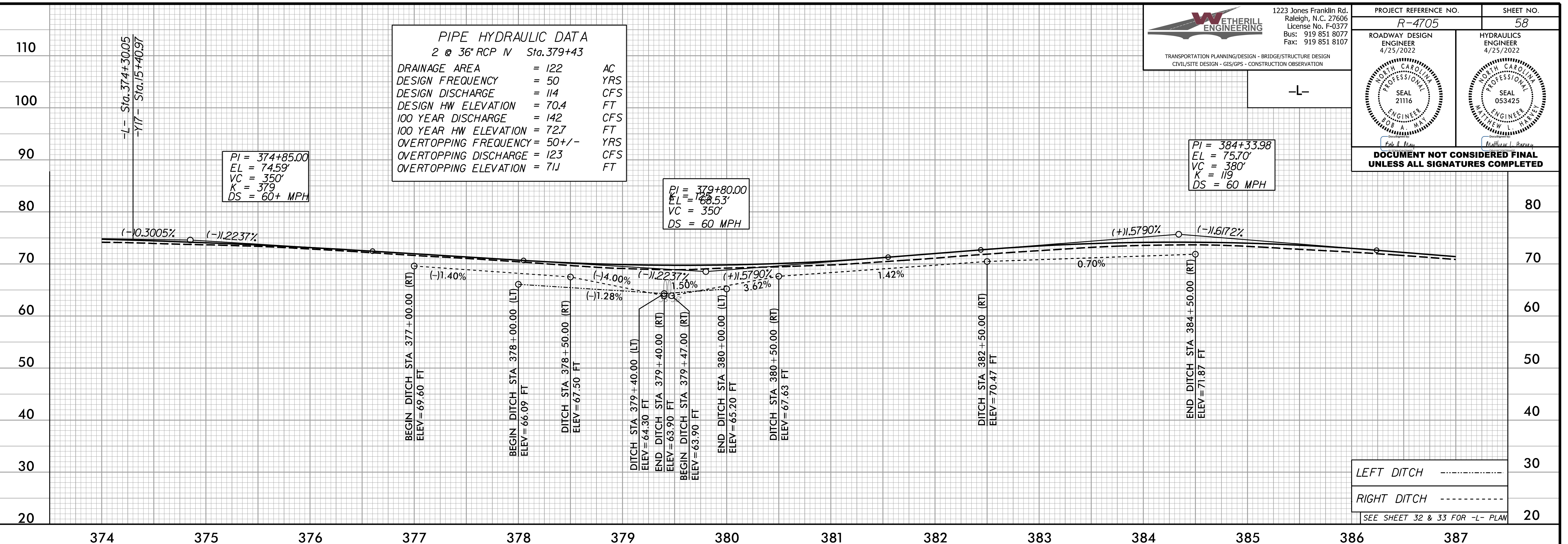
3/16/2022 R4705_Rdy_psh_57_PFL.dgn
11:58:38 AM

5/28/99

WETHERILL ENGINEERING
 1223 Jones Franklin Rd.
 Raleigh, N.C. 27606
 License No. F-0377
 Bus: 919 851 8077
 Fax: 919 851 8107

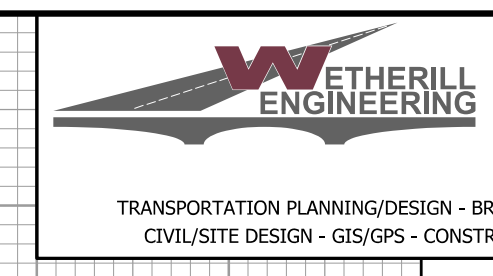
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

PROJECT REFERENCE NO. R-4705	SHEET NO. 58
ROADWAY DESIGN ENGINEER 4/25/2022	HYDRAULICS ENGINEER 4/25/2022
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



4/25/2022 4:47:05 PM psh_58_PFL.dgn

5/28/99



1223 Jones Franklin Rd.
Raleigh, N.C. 27606
License No. F-0377
Bus: 919 851 8077
Fax: 919 851 8107

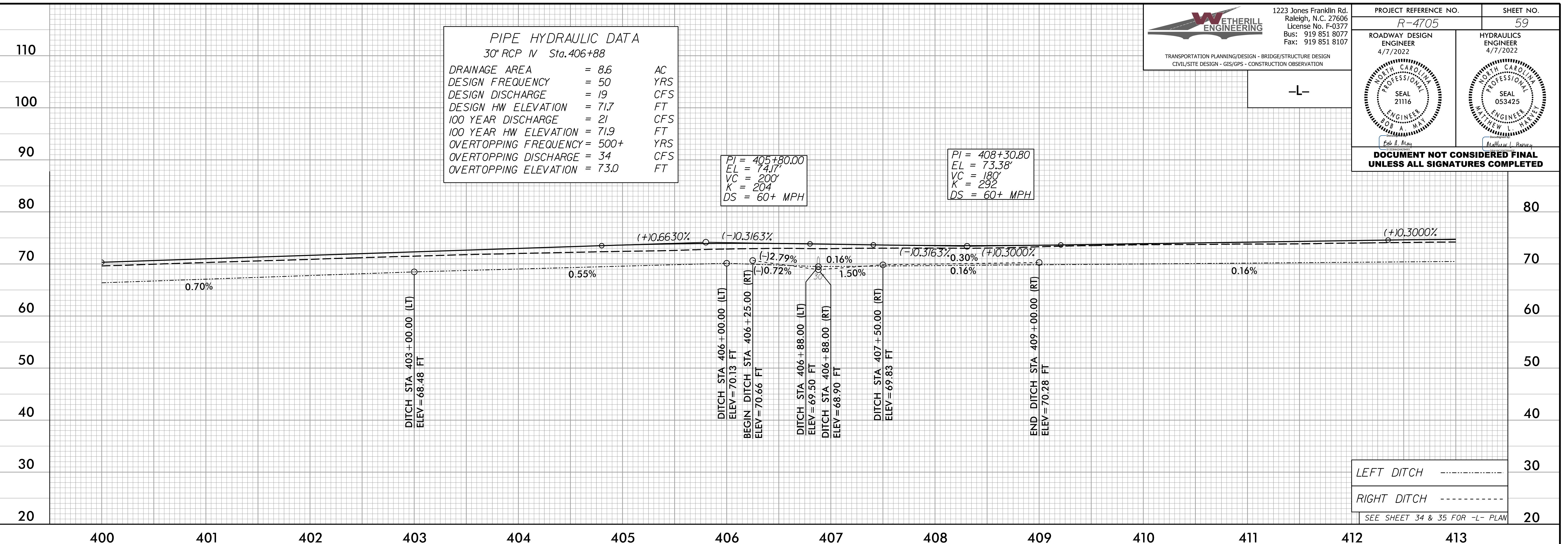
PROJECT REFERENCE NO. R-4705	SHEET NO. 59
ROADWAY DESIGN ENGINEER 4/7/2022	HYDRAULICS ENGINEER 4/7/2022
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

PIPE HYDRAULIC DATA
30" RCP N Sta. 406+88

DRAINAGE AREA	= 8.6	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 19	CFS
DESIGN HW ELEVATION	= 71.7	FT
100 YEAR DISCHARGE	= 21	CFS
100 YEAR HW ELEVATION	= 71.9	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 34	CFS
OVERTOPPING ELEVATION	= 73.0	FT

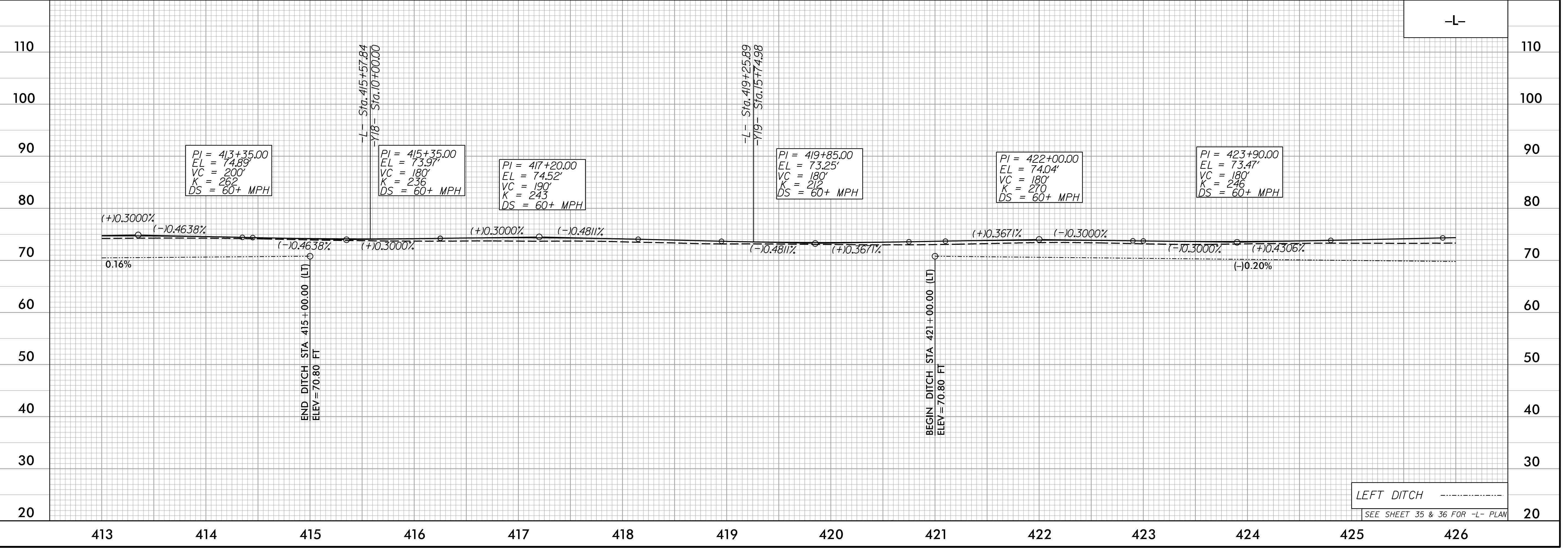
PI = 405+80.00
EL = 74.17'
VC = 200'
K = 204
DS = 60+ MPH

PI = 408+30.80
EL = 73.38'
VC = 180'
K = 292
DS = 60+ MPH



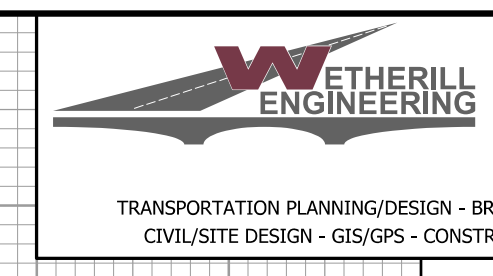
LEFT DITCH -----
RIGHT DITCH
SEE SHEET 34 & 35 FOR -L- PLAN

3/7/2022 11:51:58 AM R:\4705_Rdy_psh_59_PFL.dgn



LEFT DITCH -----
RIGHT DITCH
SEE SHEET 35 & 36 FOR -L- PLAN

5/28/99



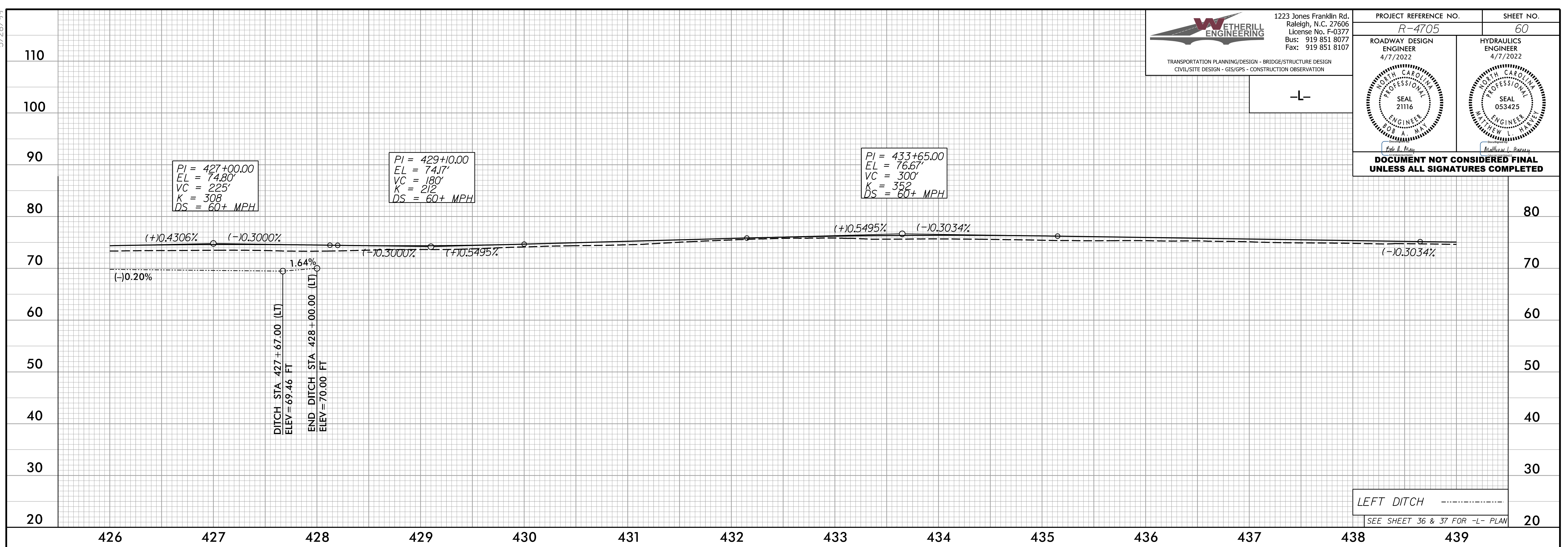
1223 Jones Franklin Rd.
Raleigh, N.C. 27606
License No. F-0377
Bus: 919 851 8077
Fax: 919 851 8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

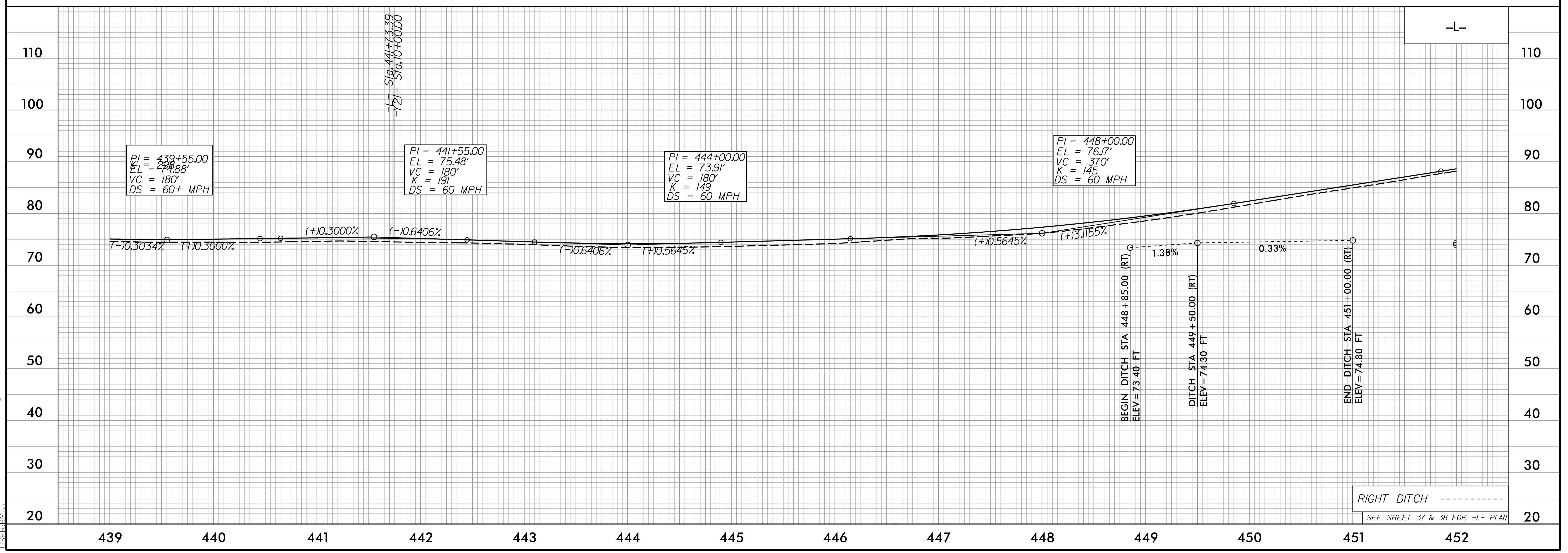
PROJECT REFERENCE NO. R-4705	SHEET NO. 60
ROADWAY DESIGN ENGINEER 4/7/2022	HYDRAULICS ENGINEER 4/7/2022

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-L-



LEFT DITCH
SEE SHEET 36 & 37 FOR -L- PLAN



RIGHT DITCH
SEE SHEET 37 & 38 FOR -L- PLAN

3/7/2022 R4705_Pldj_psh_60_PFL.dgn
11:58:38 AM

5/28/99

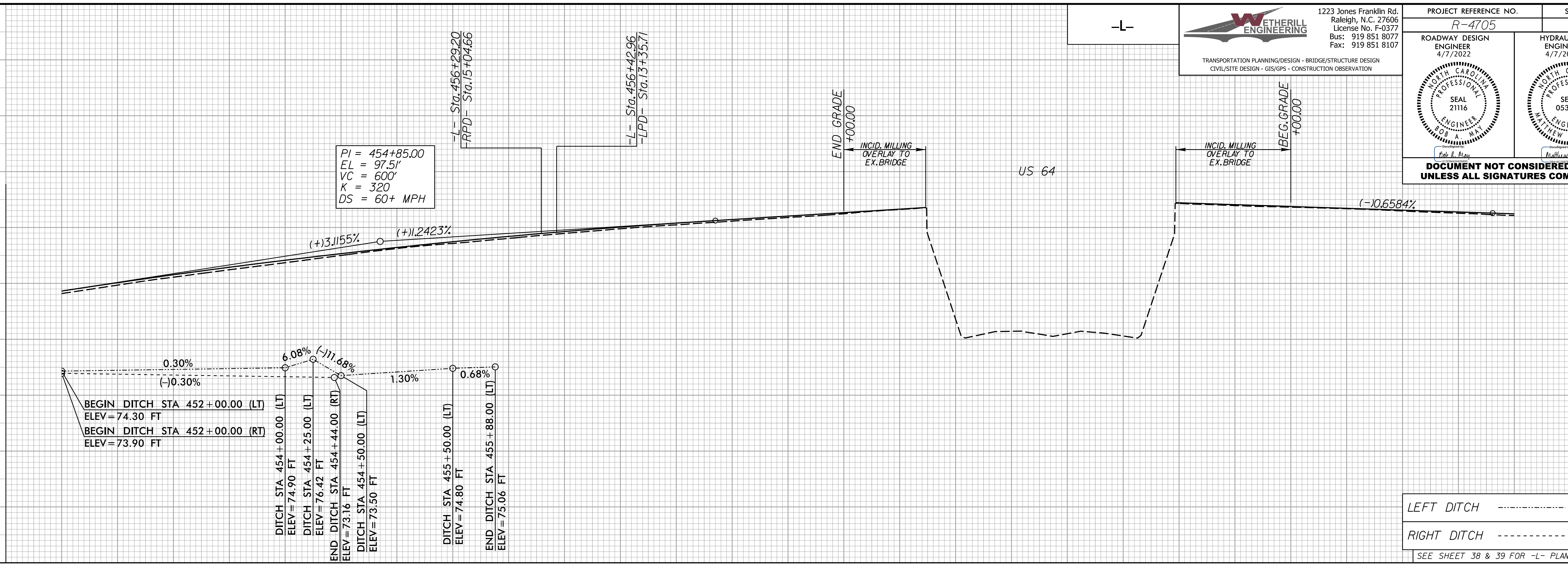
-L-

WETHERILL ENGINEERING
 1223 Jones Franklin Rd.
 Raleigh, N.C. 27606
 License No. F-0377
 Bus: 919 851 8077
 Fax: 919 851 8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

PROJECT REFERENCE NO. R-4705	SHEET NO. 61
ROADWAY DESIGN ENGINEER 4/7/2022	HYDRAULICS ENGINEER 4/7/2022
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

120
110
100
90
80
70
60
50
40



452 453 454 455 456 457 458 459 460 461 462 463 464 465

LEFT DITCH -----

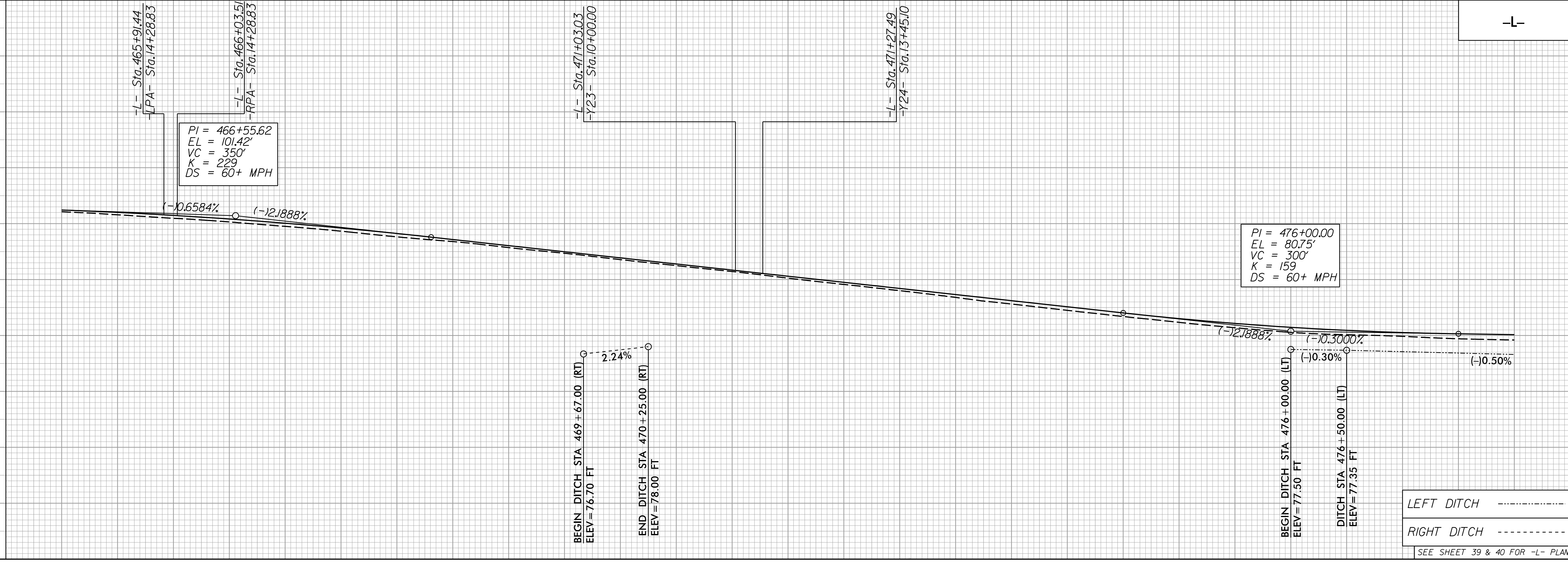
RIGHT DITCH -----

SEE SHEET 38 & 39 FOR -L- PLAN

3/7/2022 R4705_Rdy_psh_61_PFL.dgn
11:58:38 AM

-L-

130
120
110
100
90
80
70
60
50
40



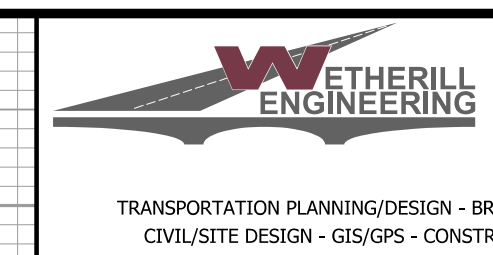
465 466 467 468 469 470 471 472 473 474 475 476 477 478

LEFT DITCH -----

RIGHT DITCH -----

SEE SHEET 39 & 40 FOR -L- PLAN

5/28/99

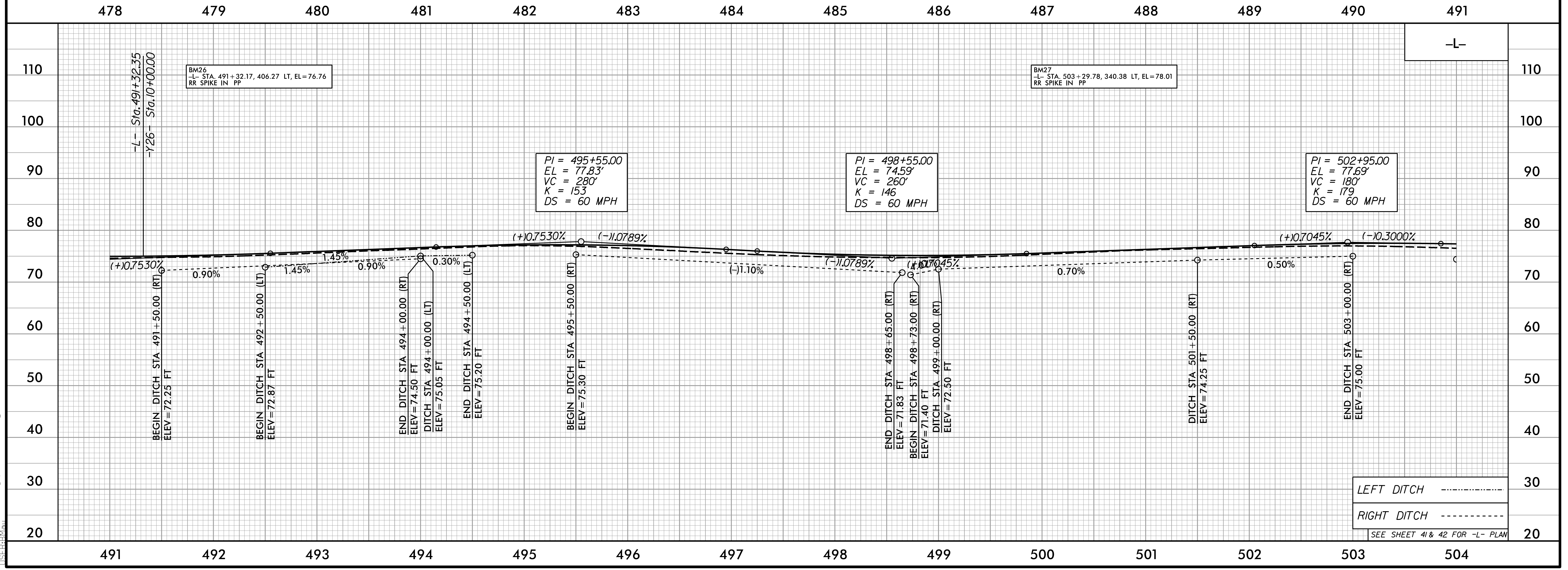
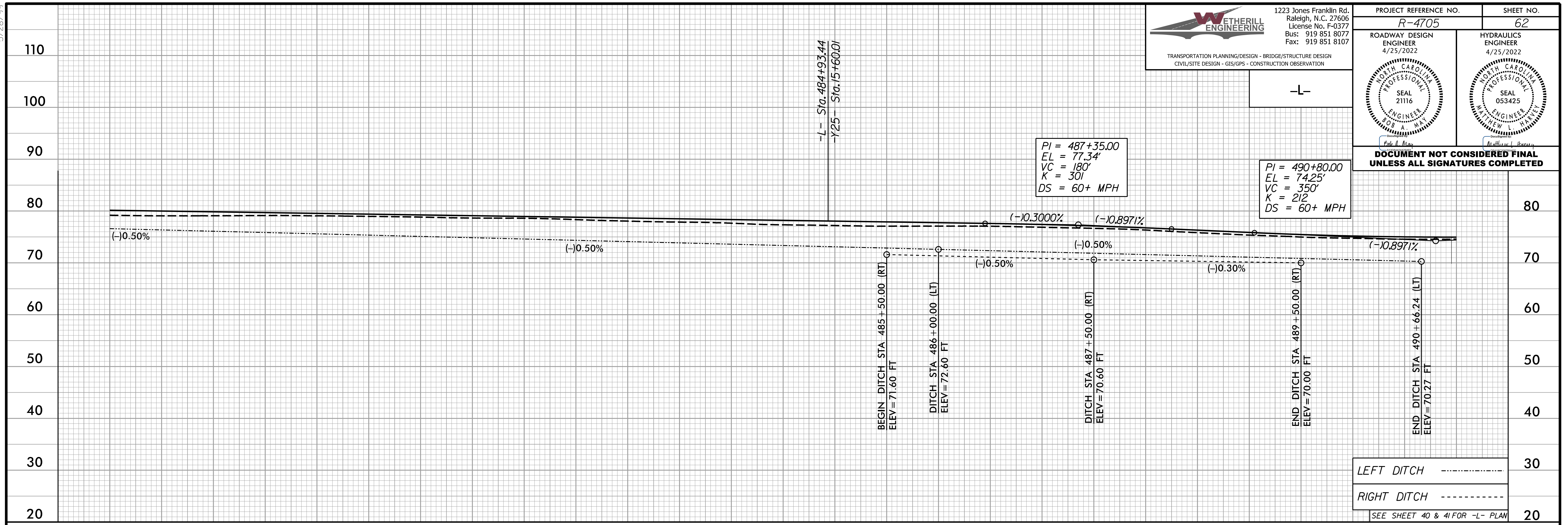


1223 Jones Franklin Rd.
Raleigh, N.C. 27606
License No. F-0377
Bus: 919 851 8077
Fax: 919 851 8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

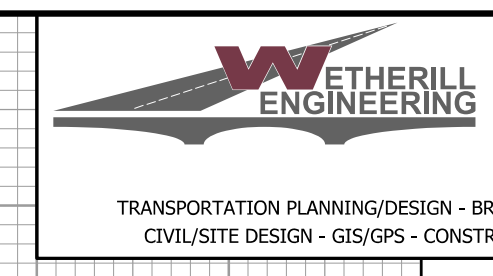
PROJECT REFERENCE NO. R-4705	SHEET NO. 62
ROADWAY DESIGN ENGINEER 4/25/2022	HYDRAULICS ENGINEER 4/25/2022

**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**



4/25/2022
R-4705_Rdy_psh_62_PFL.dgn
11:51:58 AM

5/28/22

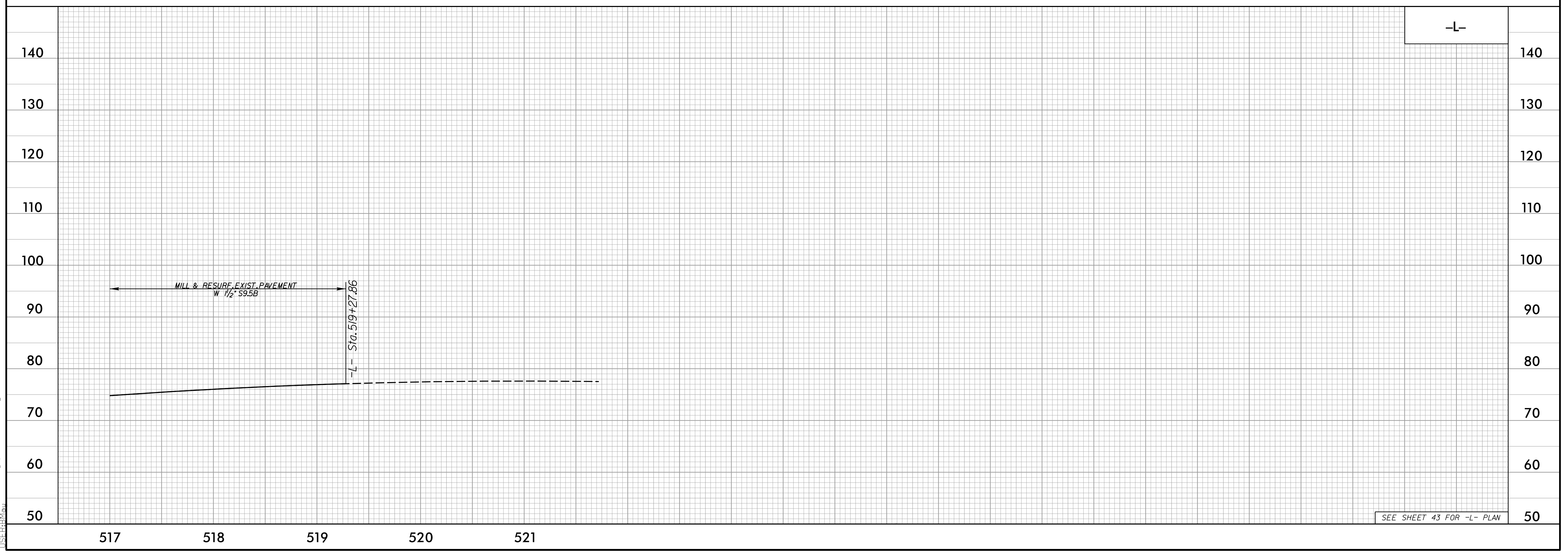
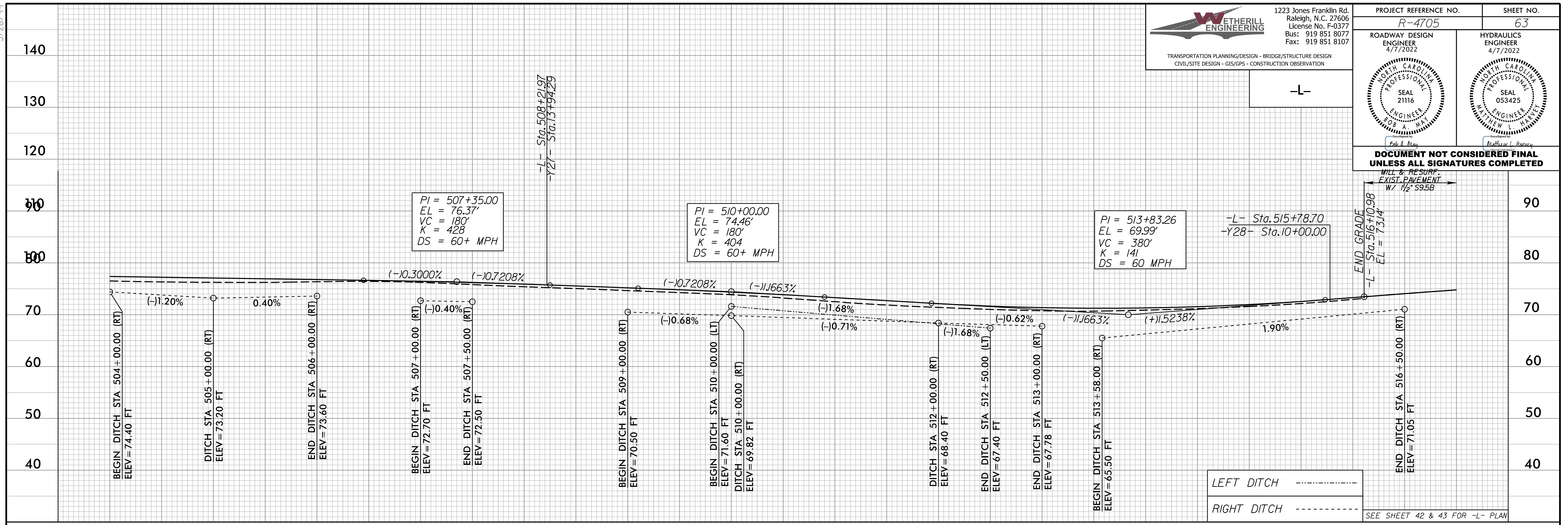


1223 Jones Franklin Rd.
Raleigh, N.C. 27606
License No. F-0377
Bus: 919 851 8077
Fax: 919 851 8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

PROJECT REFERENCE NO. R-4705	SHEET NO. 63
ROADWAY DESIGN ENGINEER 4/7/2022 	HYDRAULICS ENGINEER 4/7/2022

**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**



3/7/2022 R4705_Rdy_psh_63_PFL.dgn
USER:RMB

5/28/2022

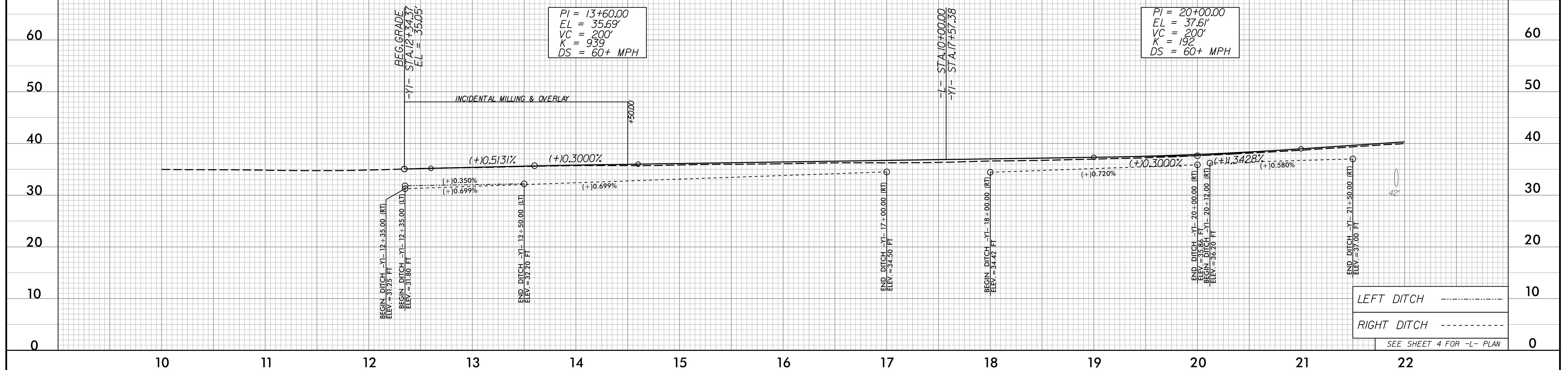
PIPE HYDRAULIC DATA		
42" RCP III Sta. 21+92		
DRAINAGE AREA	= 52	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 22	CFS
DESIGN HW ELEVATION	= 34.8	FT
100 YEAR DISCHARGE	= 28	CFS
100 YEAR HW ELEVATION	= 35.2	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 39	CFS
OVERTOPPING ELEVATION	= 36.0	FT

WETHERILL ENGINEERING
 1223 Jones Franklin Rd.
 Raleigh, N.C. 27606
 License No. F-0377
 Bus: 919 851 8077
 Fax: 919 851 8107

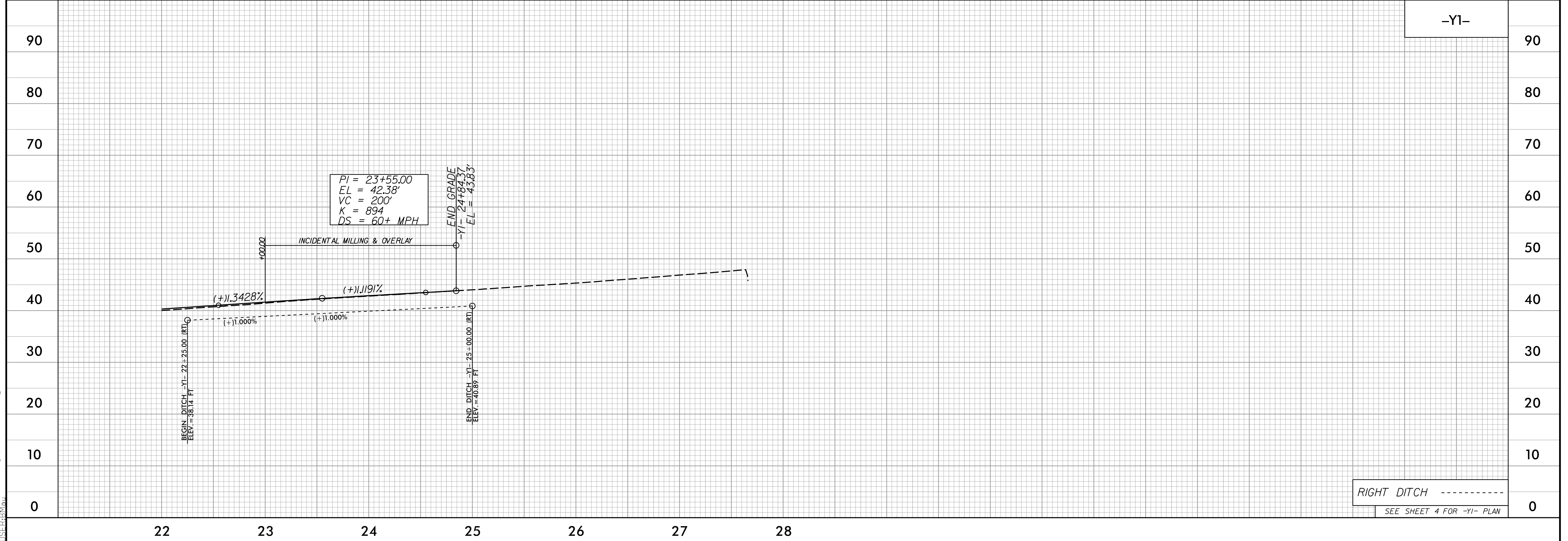
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

PROJECT REFERENCE NO. R-4705	SHEET NO. 64
ROADWAY DESIGN ENGINEER 4/7/2022 	HYDRAULICS ENGINEER 4/7/2022
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

-Y1-



LEFT DITCH -----
 RIGHT DITCH -----
 SEE SHEET 4 FOR -L- PLAN



RIGHT DITCH -----
 SEE SHEET 4 FOR -Y1- PLAN

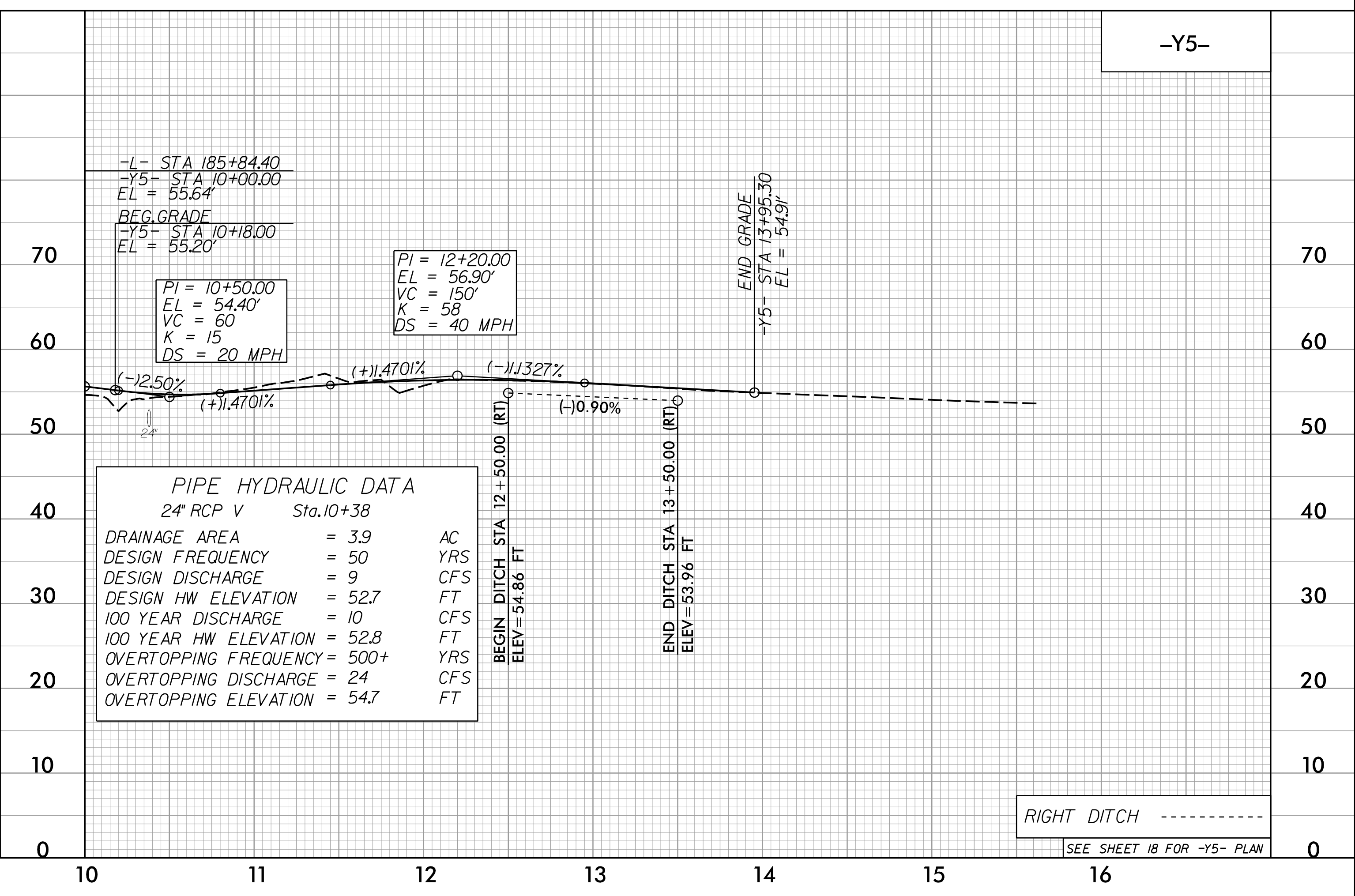
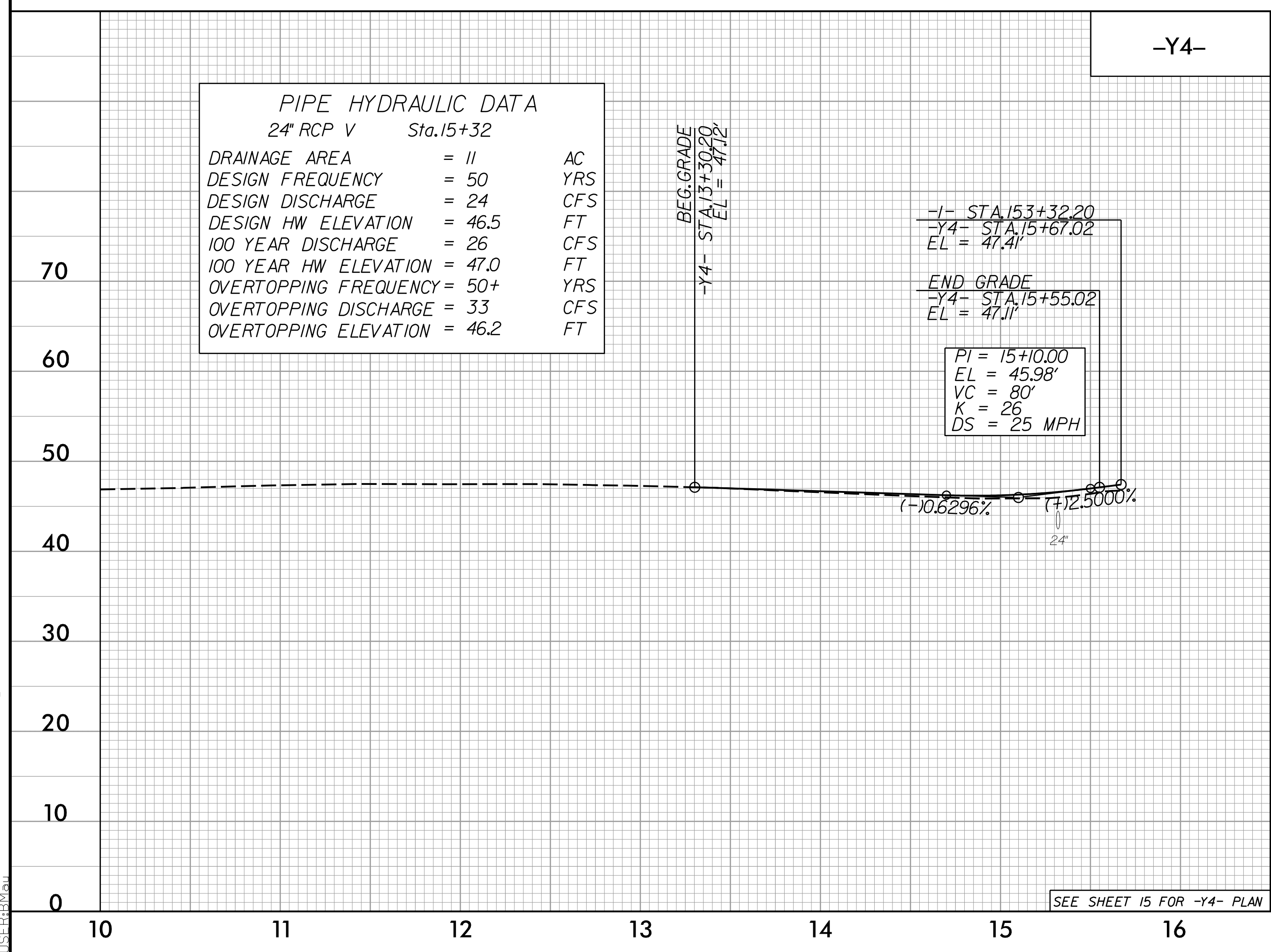
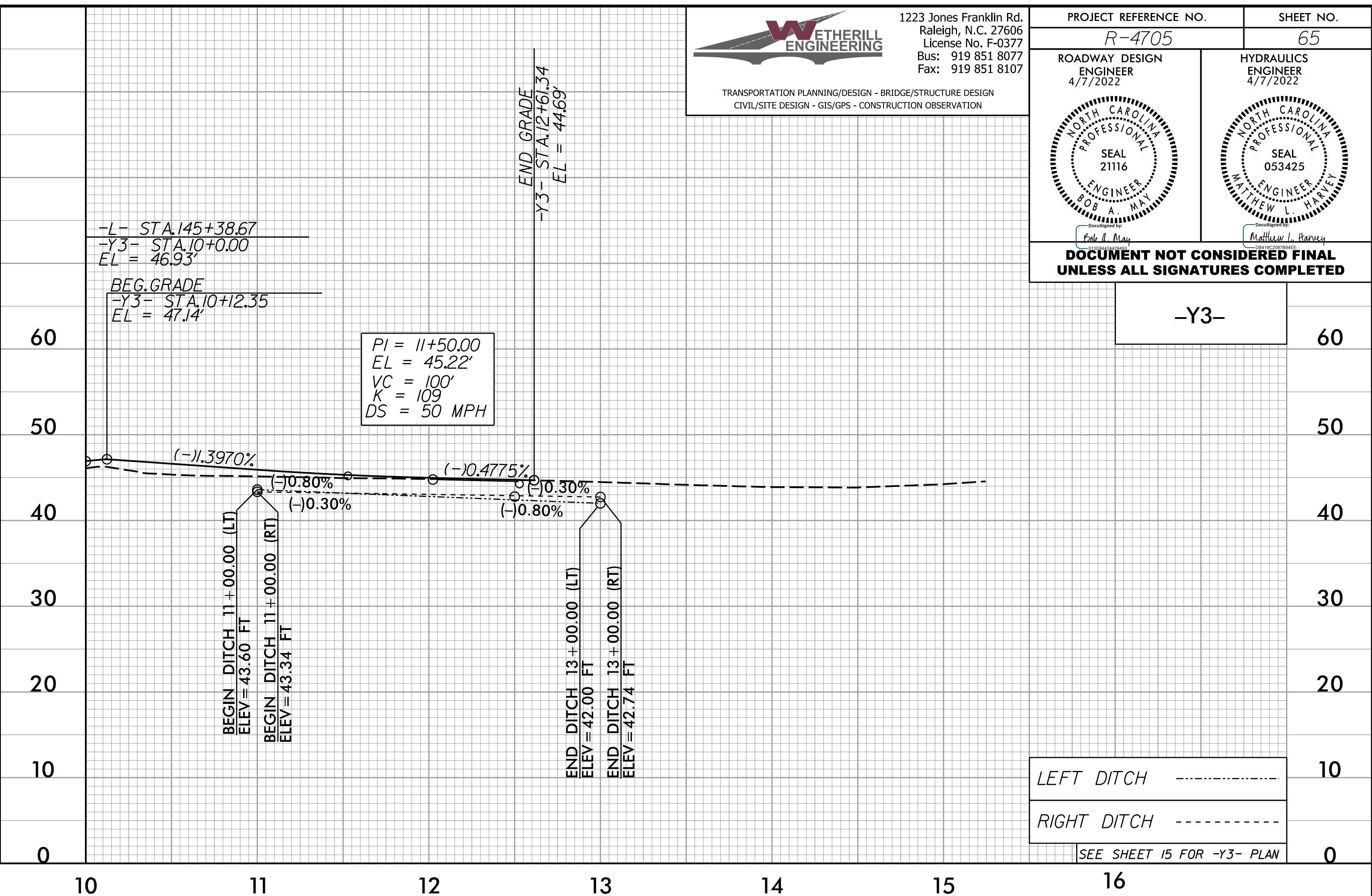
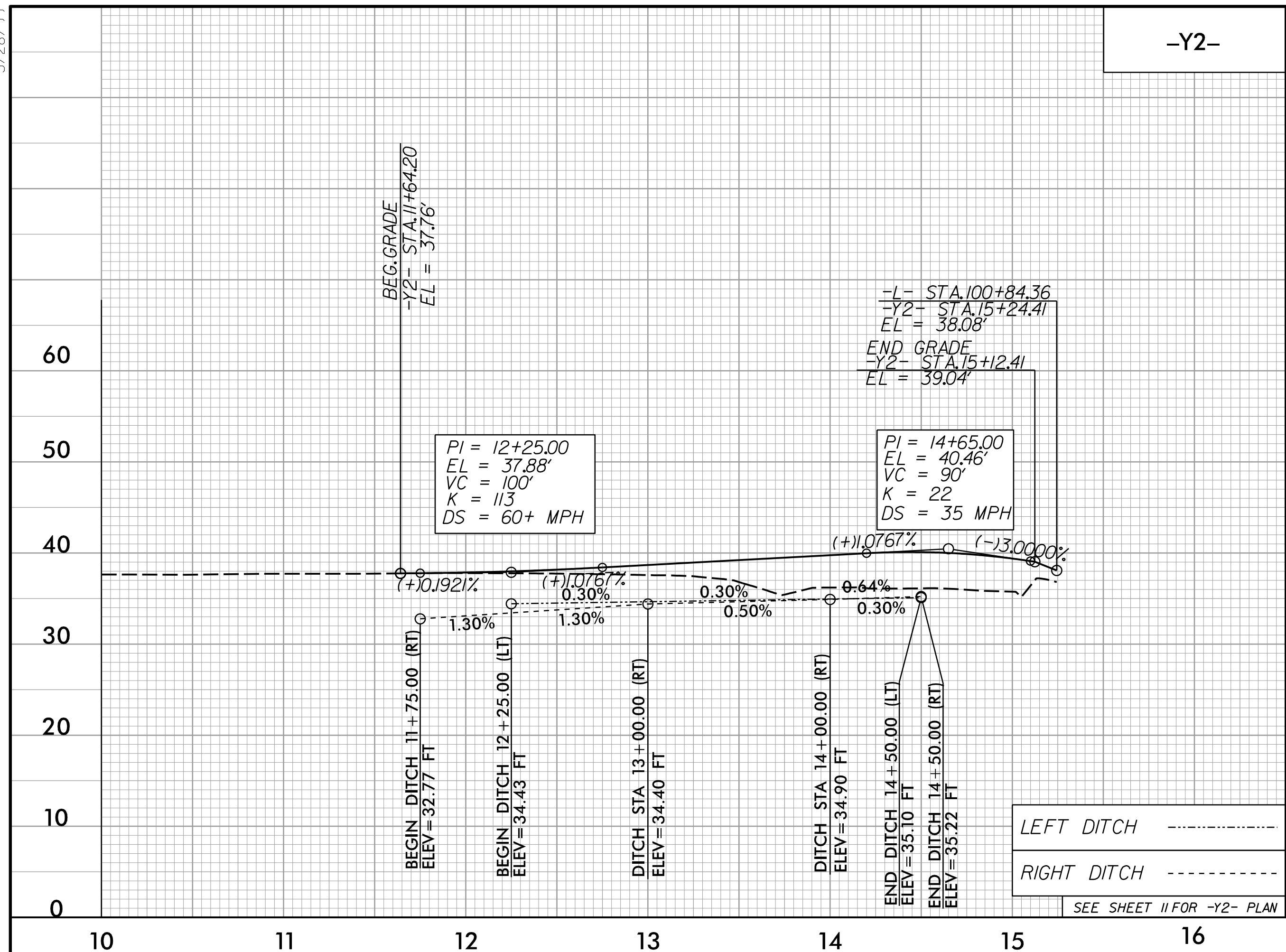
3/7/2022 R4705_Rdy_psh_64_PFL.dgn
 JUSEBEM

5/28/99

WETHERILL ENGINEERING
 1223 Jones Franklin Rd.
 Raleigh, N.C. 27606
 License No. F-0377
 Bus: 919 851 8077
 Fax: 919 851 8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

PROJECT REFERENCE NO. R-4705	SHEET NO. 65
ROADWAY DESIGN ENGINEER 4/7/2022	HYDRAULICS ENGINEER 4/7/2022
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



3/7/2022 R4705_Pdu_psh_65_PFL.dgn

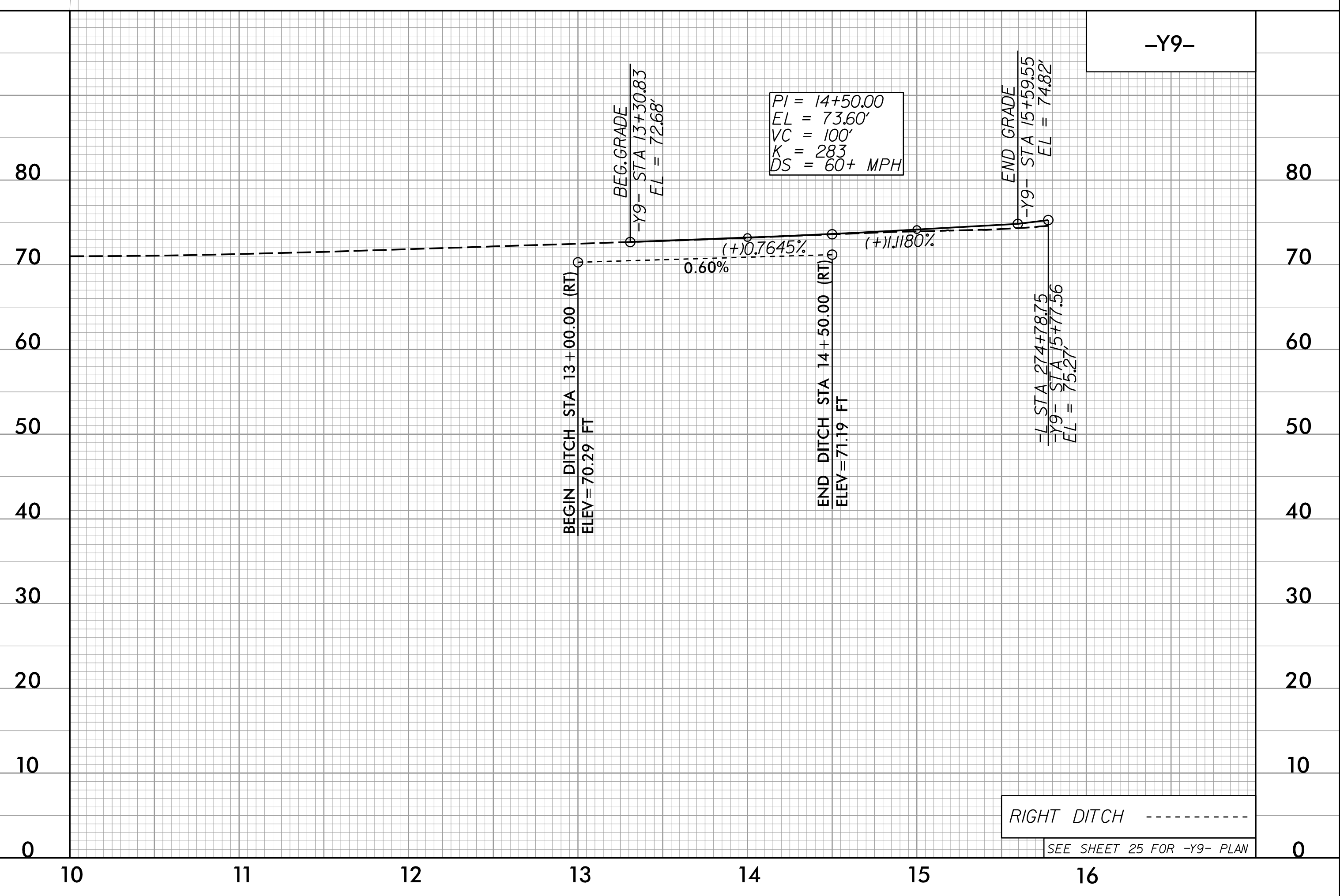
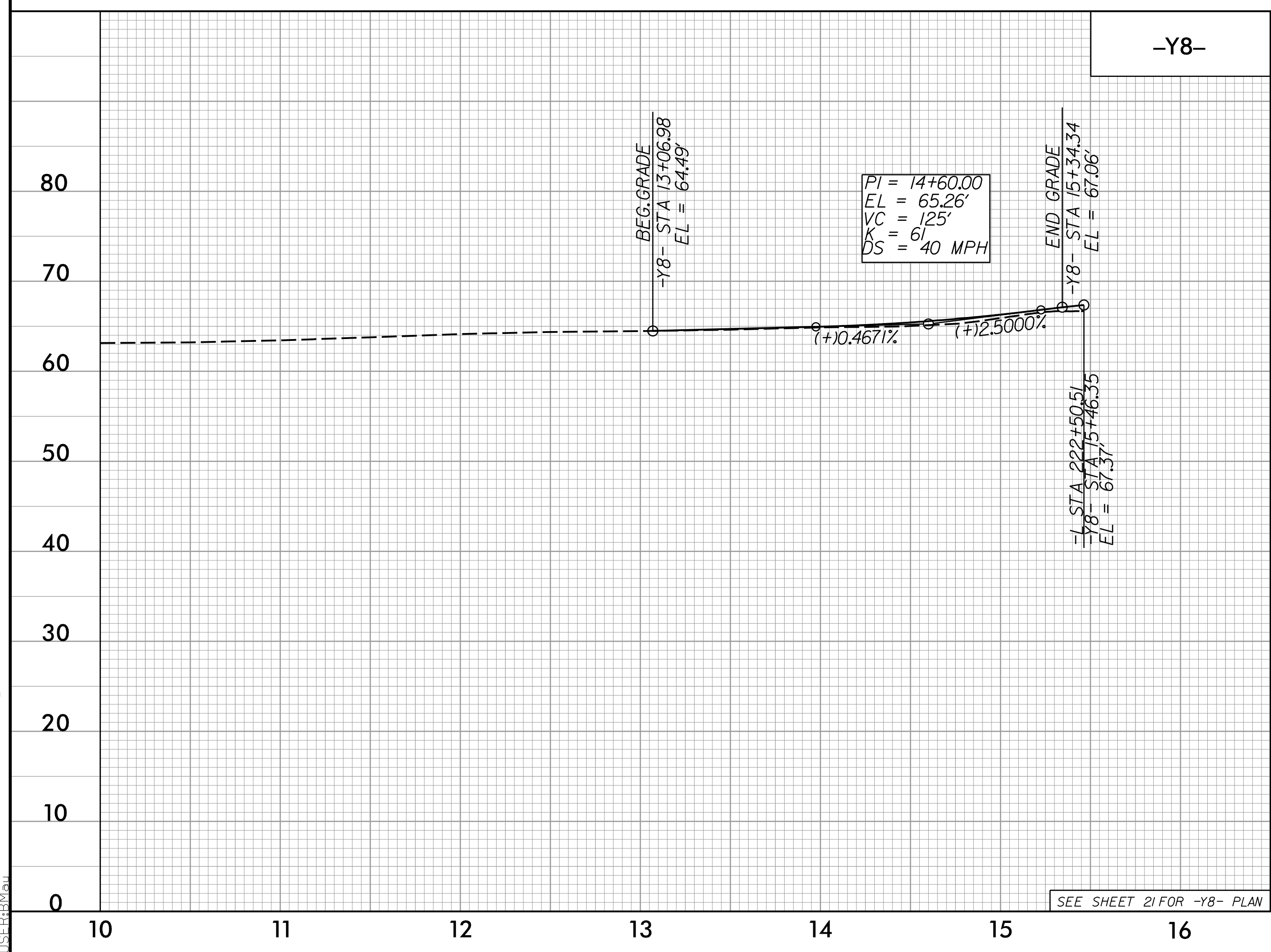
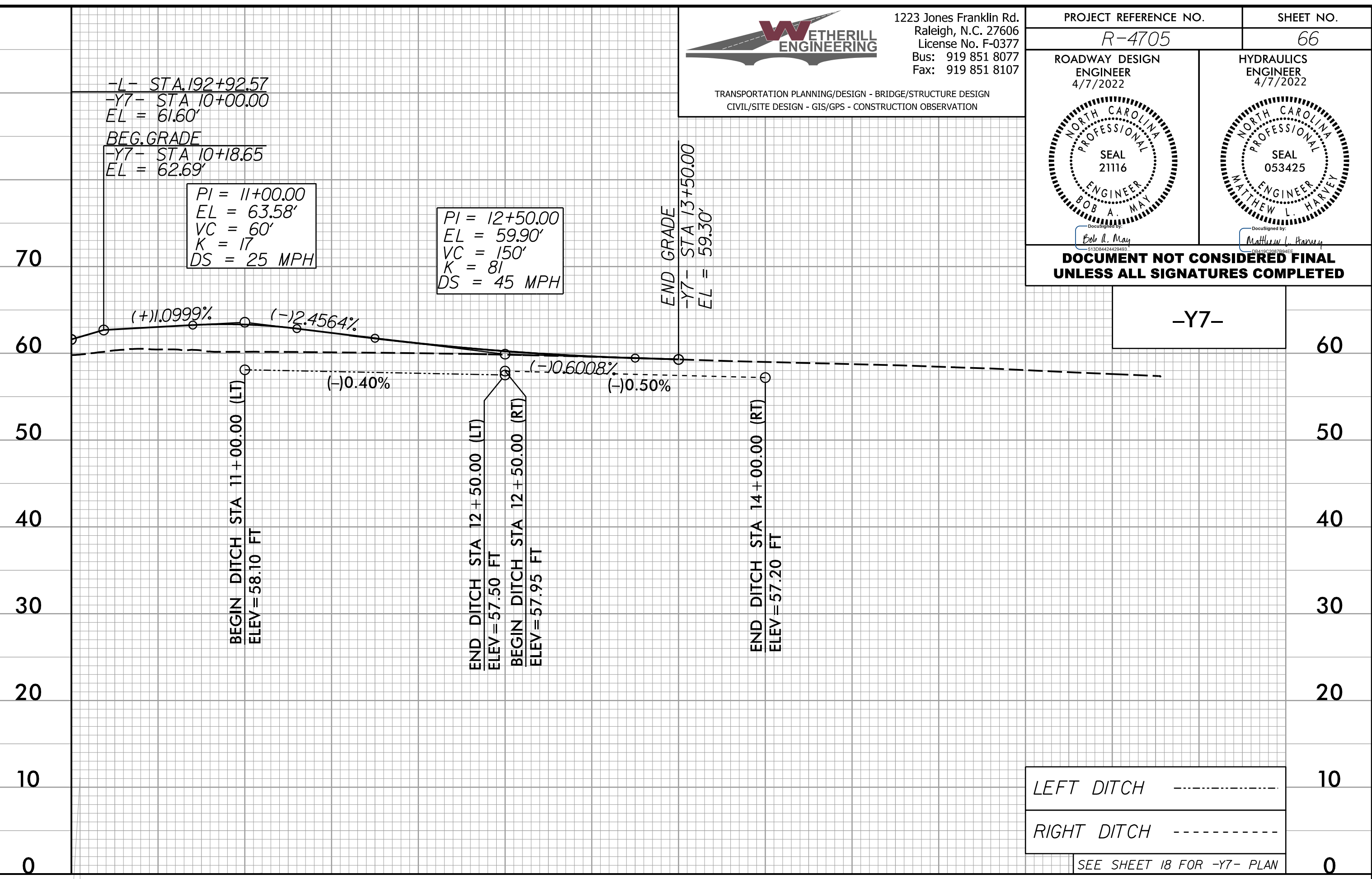
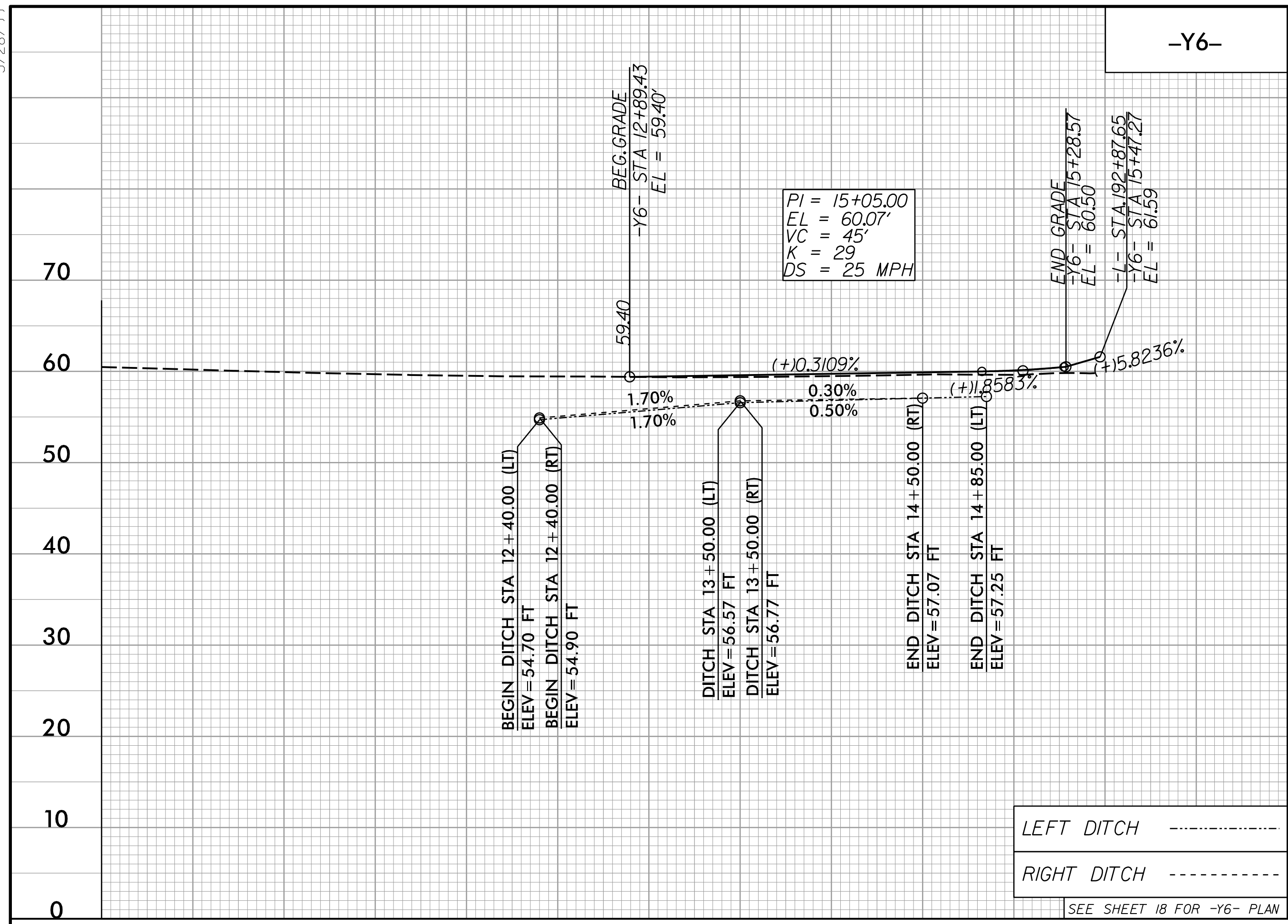
5/28/22

3/7/2022 R4705_Pduj_psh_66_PFL.dgn
USER:R4705

WETHERILL ENGINEERING
 1223 Jones Franklin Rd.
 Raleigh, N.C. 27606
 License No. F-0377
 Bus: 919 851 8077
 Fax: 919 851 8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

PROJECT REFERENCE NO. R-4705	SHEET NO. 66
ROADWAY DESIGN ENGINEER 4/7/2022	HYDRAULICS ENGINEER 4/7/2022
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

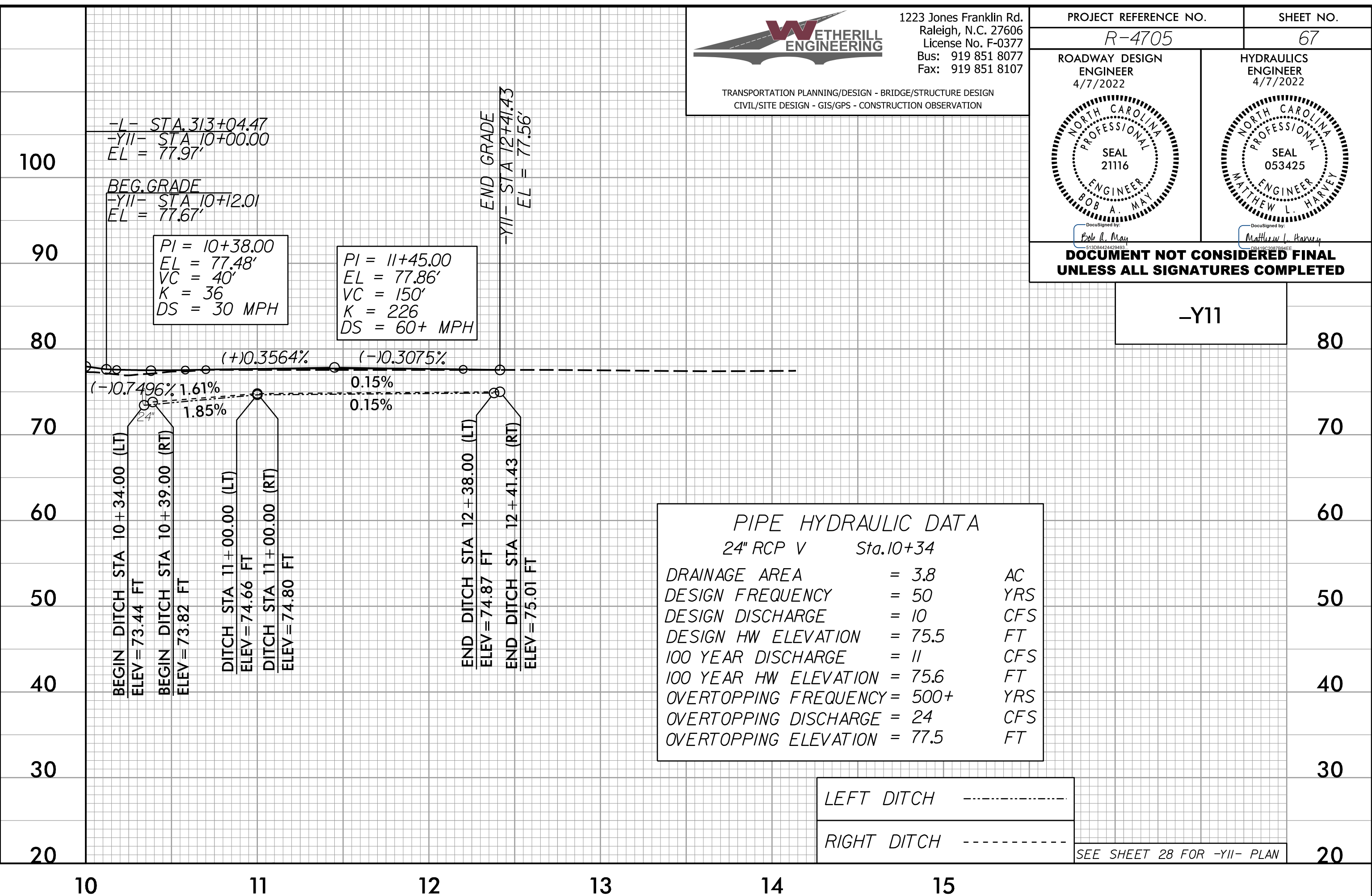
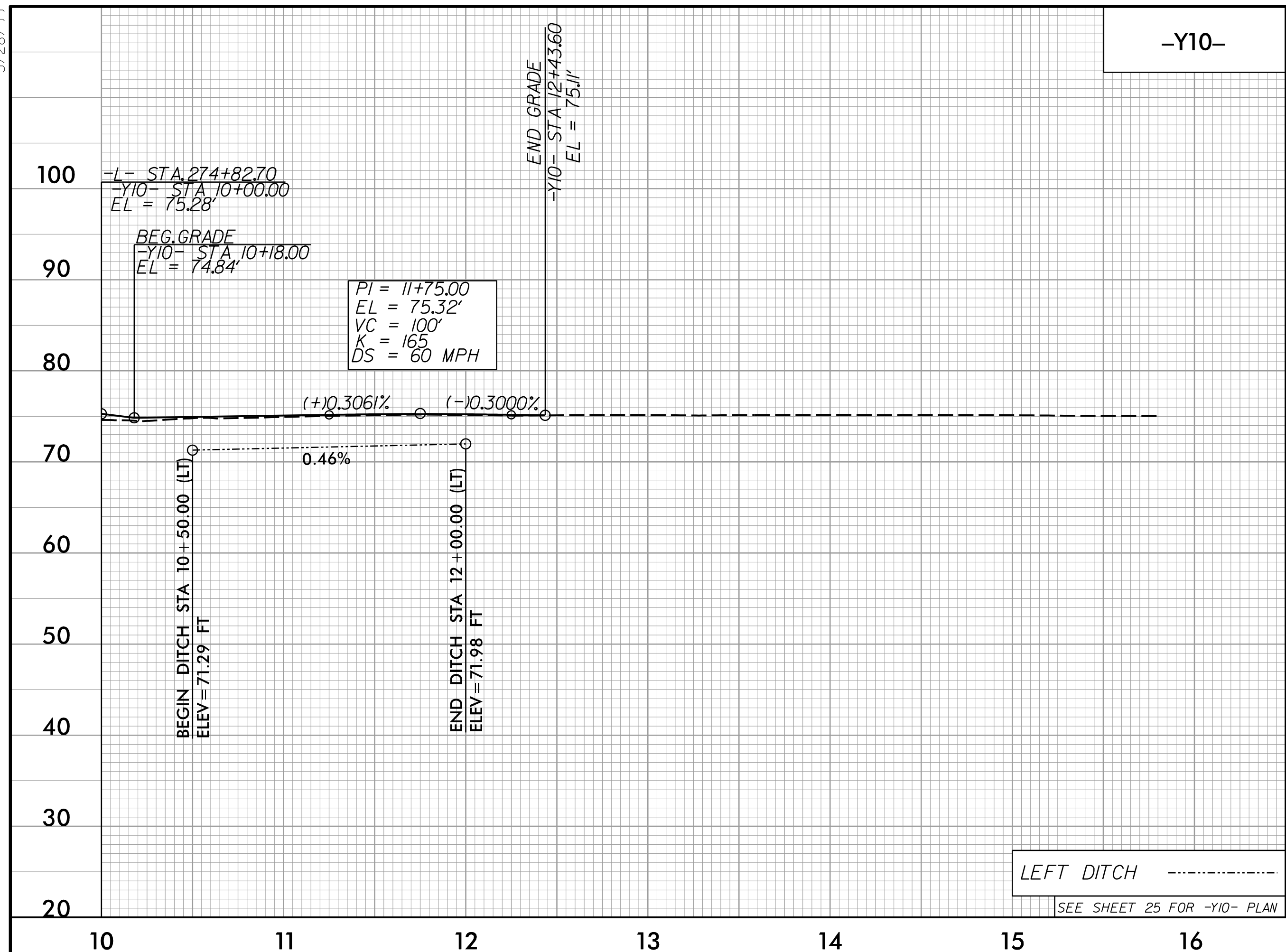


5/28/99

WETHERILL ENGINEERING
 1223 Jones Franklin Rd.
 Raleigh, N.C. 27606
 License No. F-0377
 Bus: 919 851 8077
 Fax: 919 851 8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

PROJECT REFERENCE NO. R-4705	SHEET NO. 67
ROADWAY DESIGN ENGINEER 4/7/2022	HYDRAULICS ENGINEER 4/7/2022
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

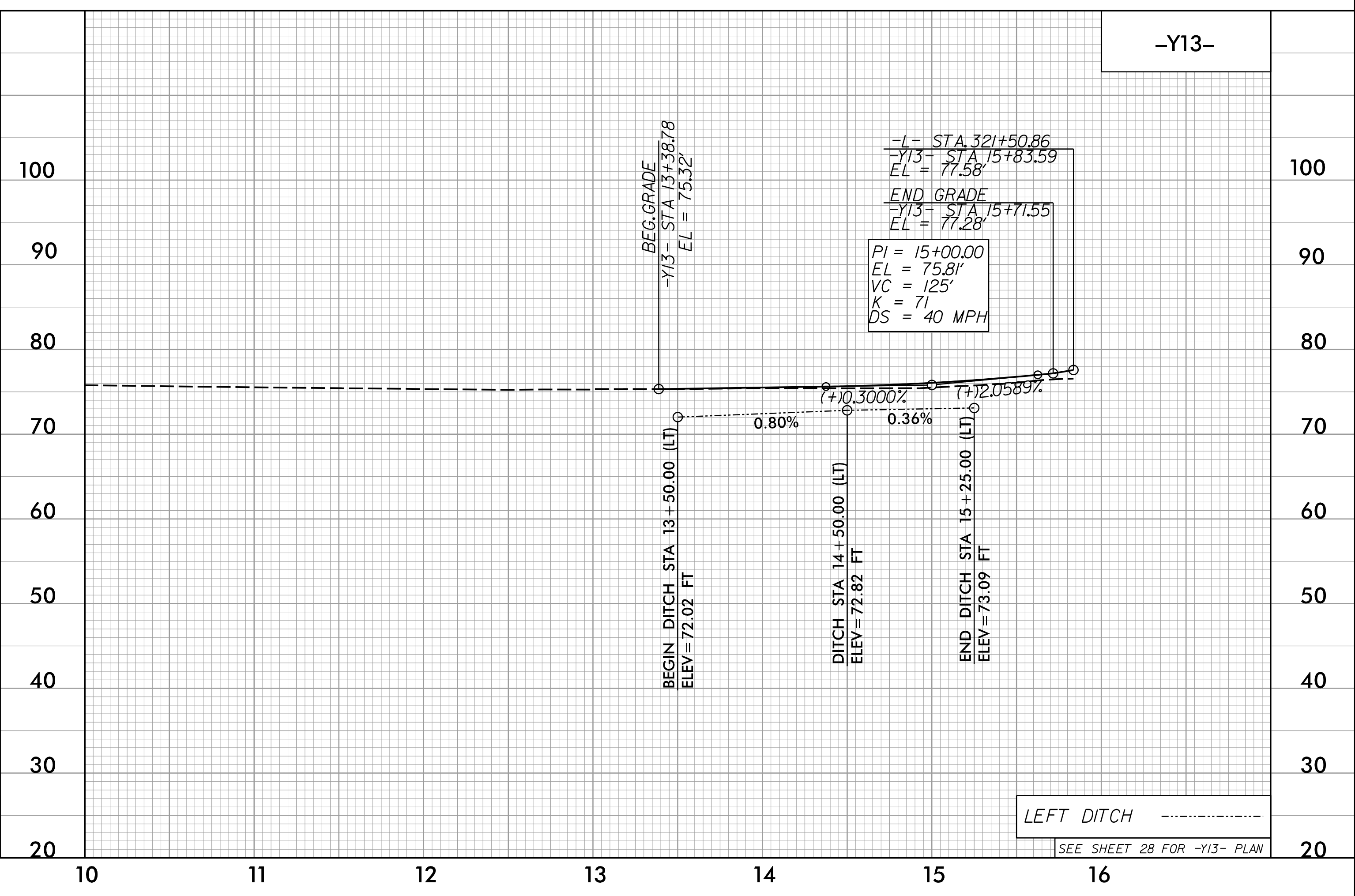
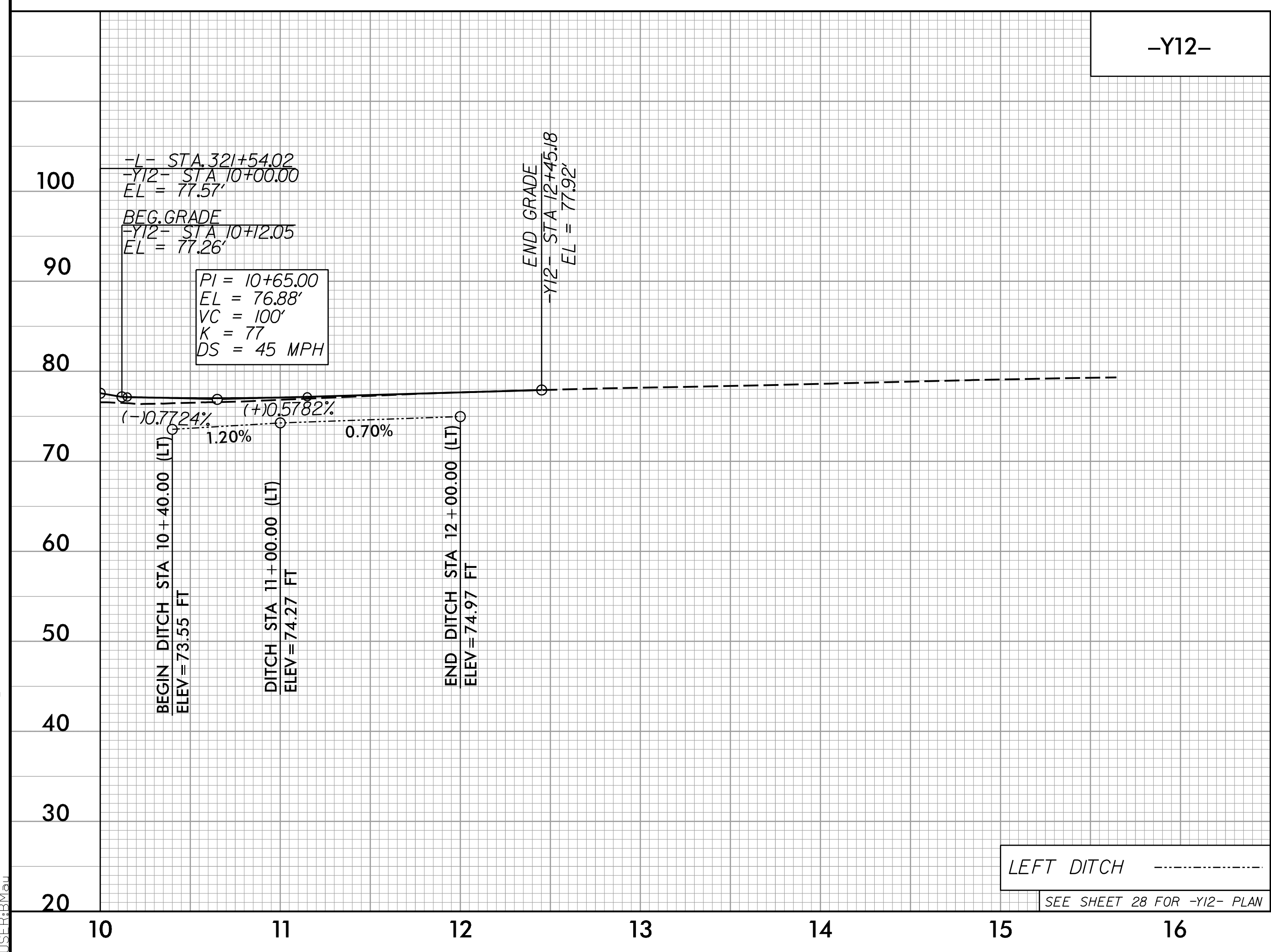


PIPE HYDRAULIC DATA
 24" RCP V Sta.10+34

DRAINAGE AREA	= 3.8	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 10	CFS
DESIGN HW ELEVATION	= 75.5	FT
100 YEAR DISCHARGE	= 11	CFS
100 YEAR HW ELEVATION	= 75.6	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 24	CFS
OVERTOPPING ELEVATION	= 77.5	FT

LEFT DITCH -----
 SEE SHEET 25 FOR -Y10- PLAN

LEFT DITCH -----
 RIGHT DITCH -----
 SEE SHEET 28 FOR -Y11- PLAN



LEFT DITCH -----
 SEE SHEET 28 FOR -Y12- PLAN

LEFT DITCH -----
 SEE SHEET 28 FOR -Y13- PLAN

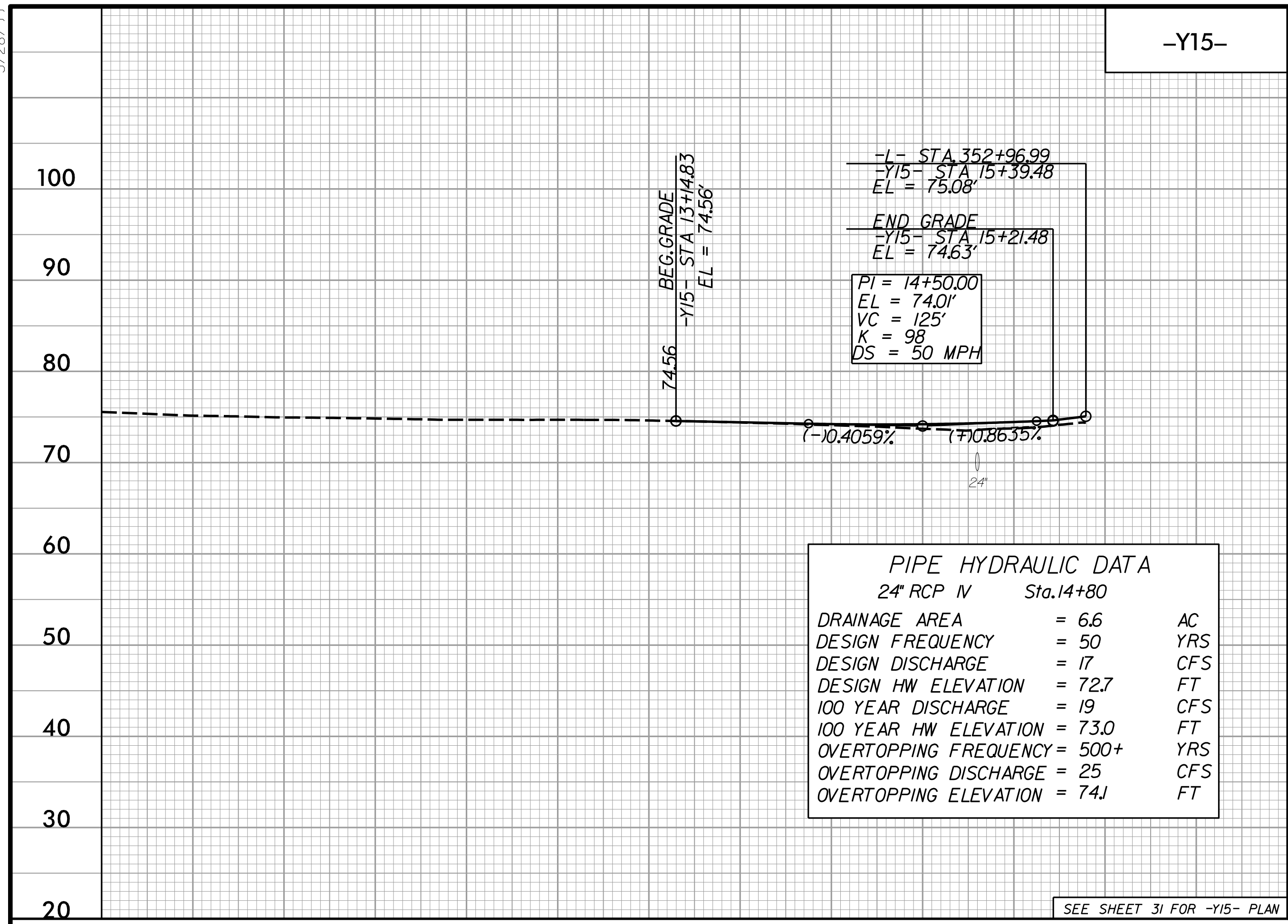
3/7/2022 R4705_Pdu_psh_67_PFL.dgn
USER:RMB

5/28/22

WETHERILL ENGINEERING
 1223 Jones Franklin Rd.
 Raleigh, N.C. 27606
 License No. F-0377
 Bus: 919 851 8077
 Fax: 919 851 8107

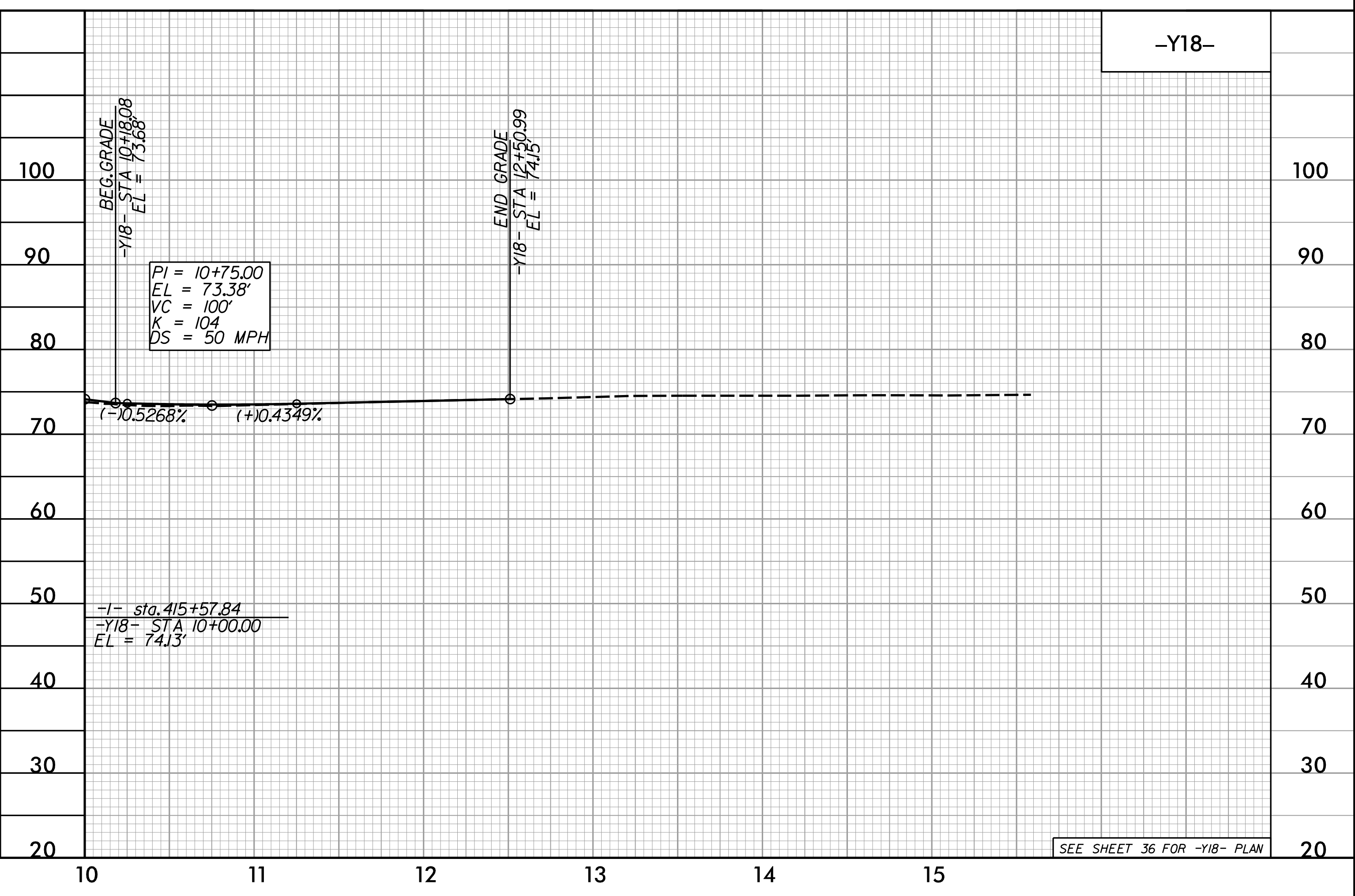
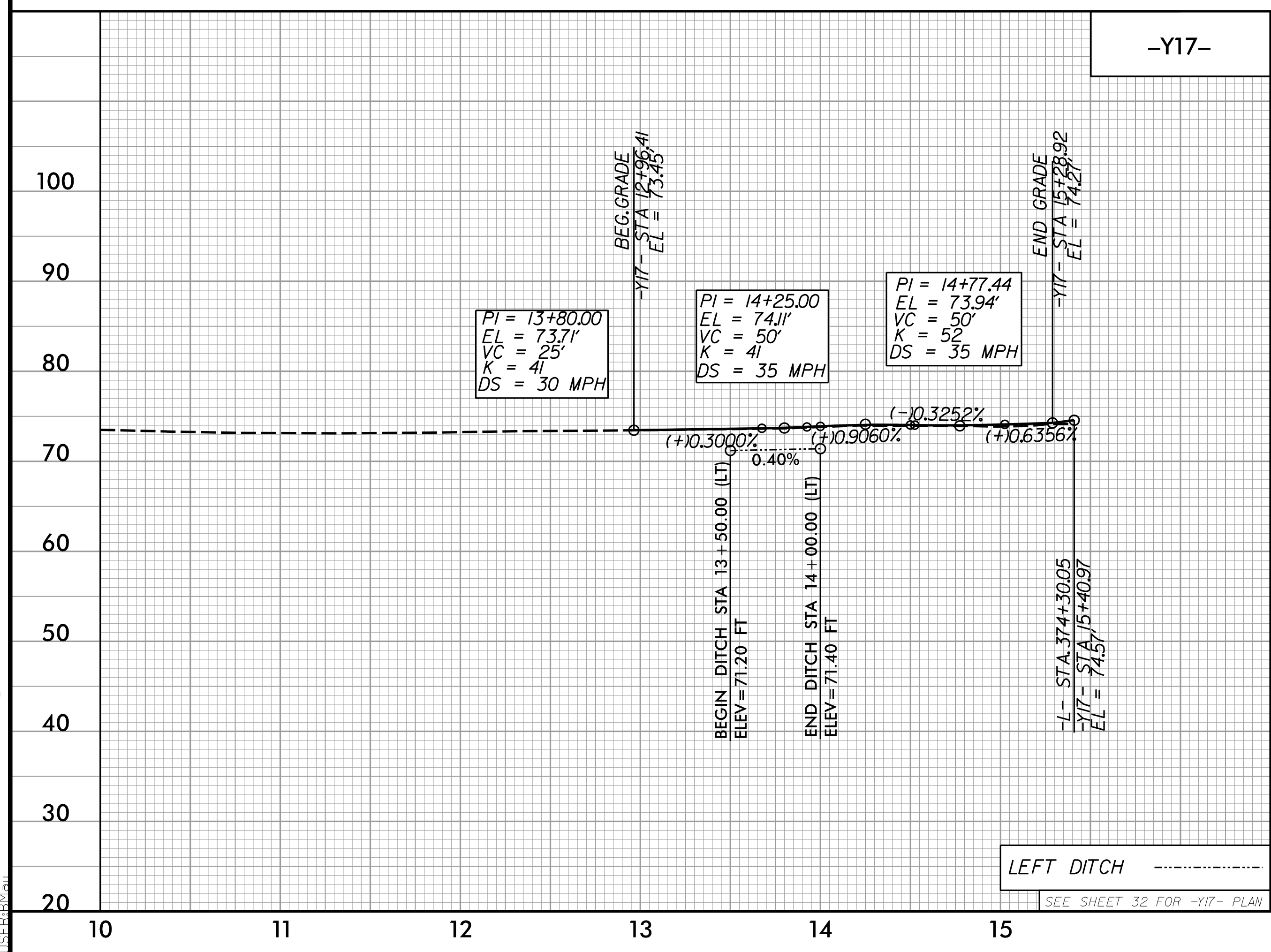
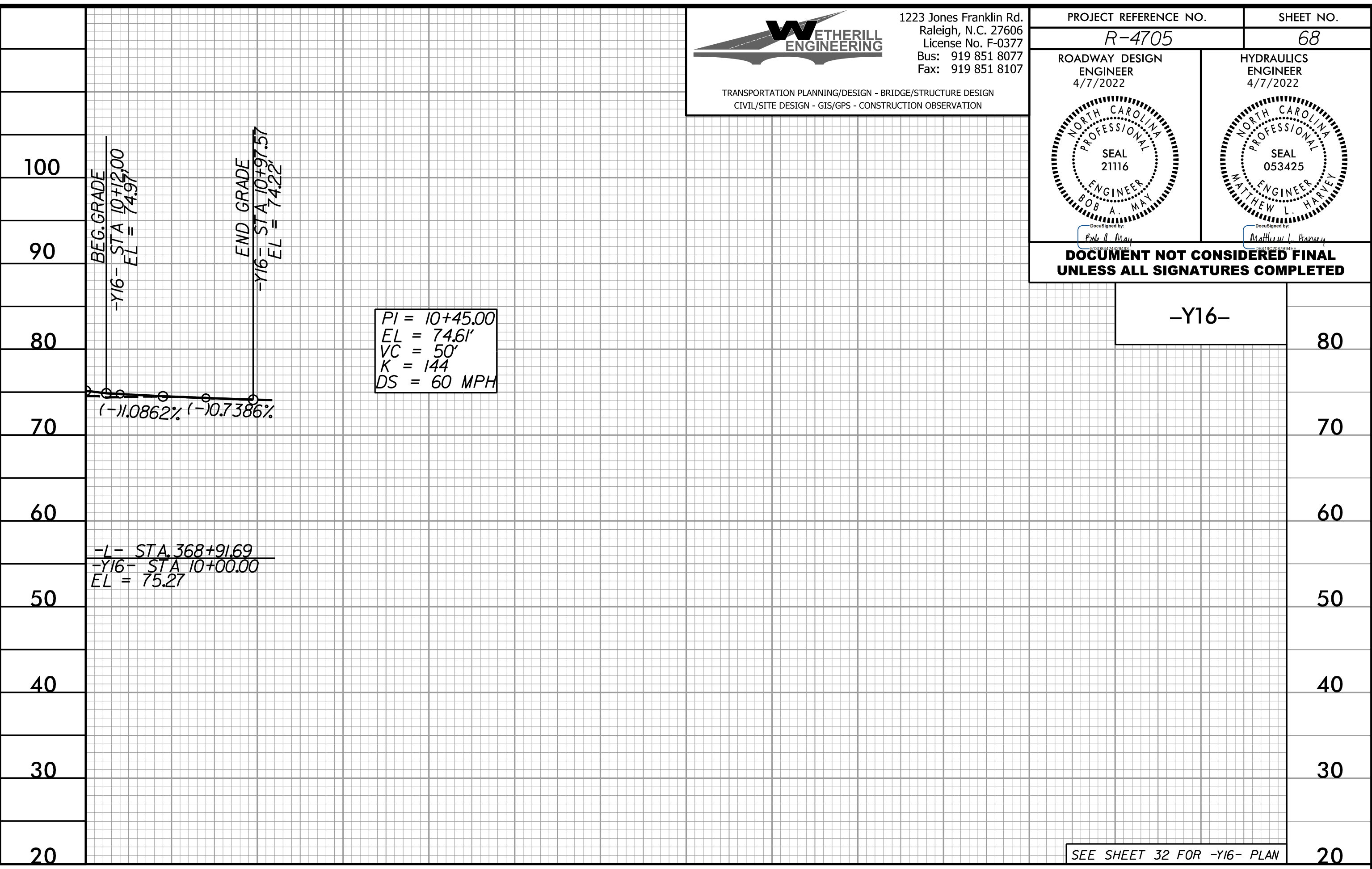
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

PROJECT REFERENCE NO. R-4705	SHEET NO. 68
ROADWAY DESIGN ENGINEER 4/7/2022	HYDRAULICS ENGINEER 4/7/2022
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



PIPE HYDRAULIC DATA
24" RCP IV Sta. 14+80

DRAINAGE AREA	= 6.6	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 17	CFS
DESIGN HW ELEVATION	= 72.7	FT
100 YEAR DISCHARGE	= 19	CFS
100 YEAR HW ELEVATION	= 73.0	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 25	CFS
OVERTOPPING ELEVATION	= 74.1	FT



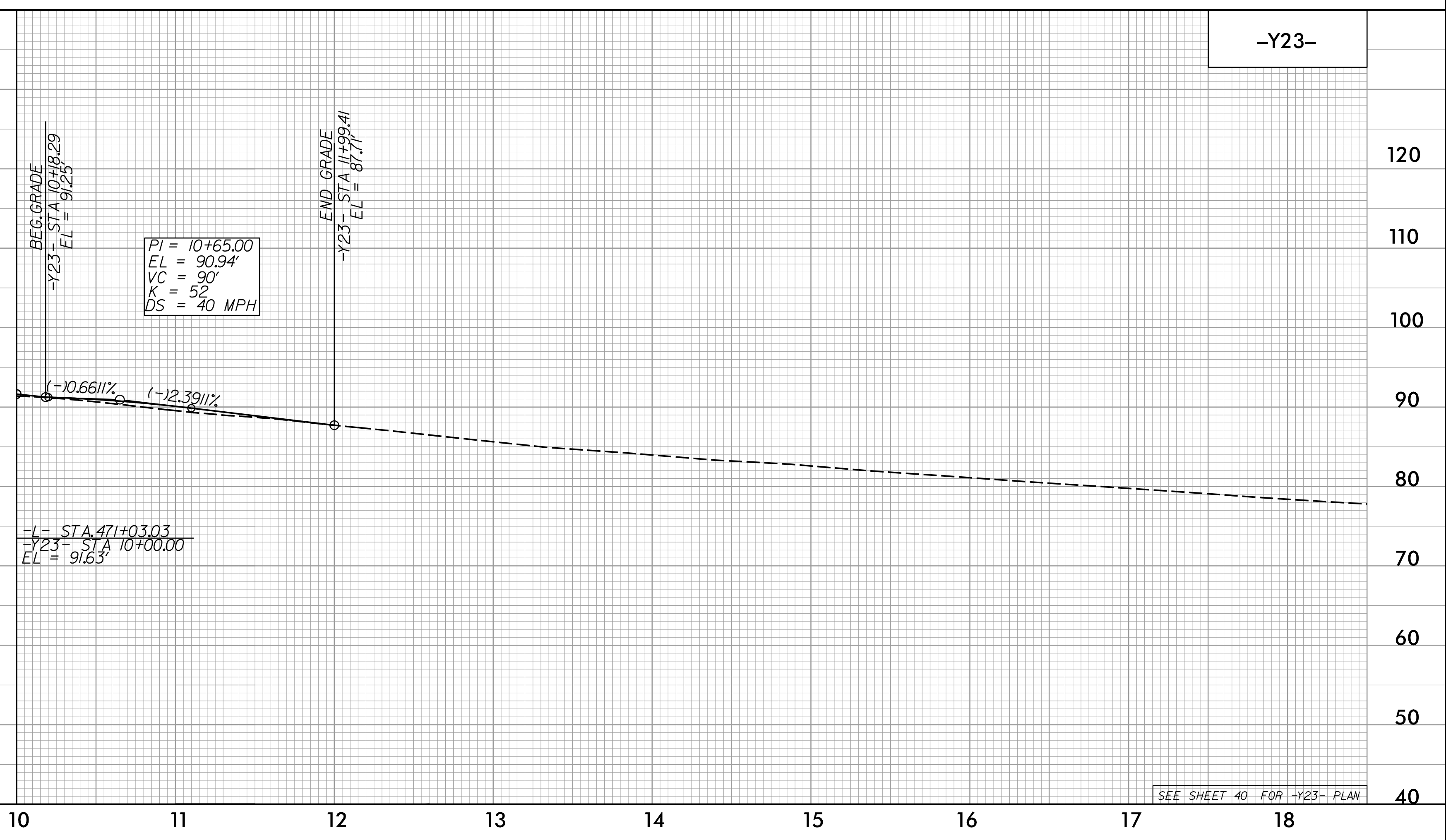
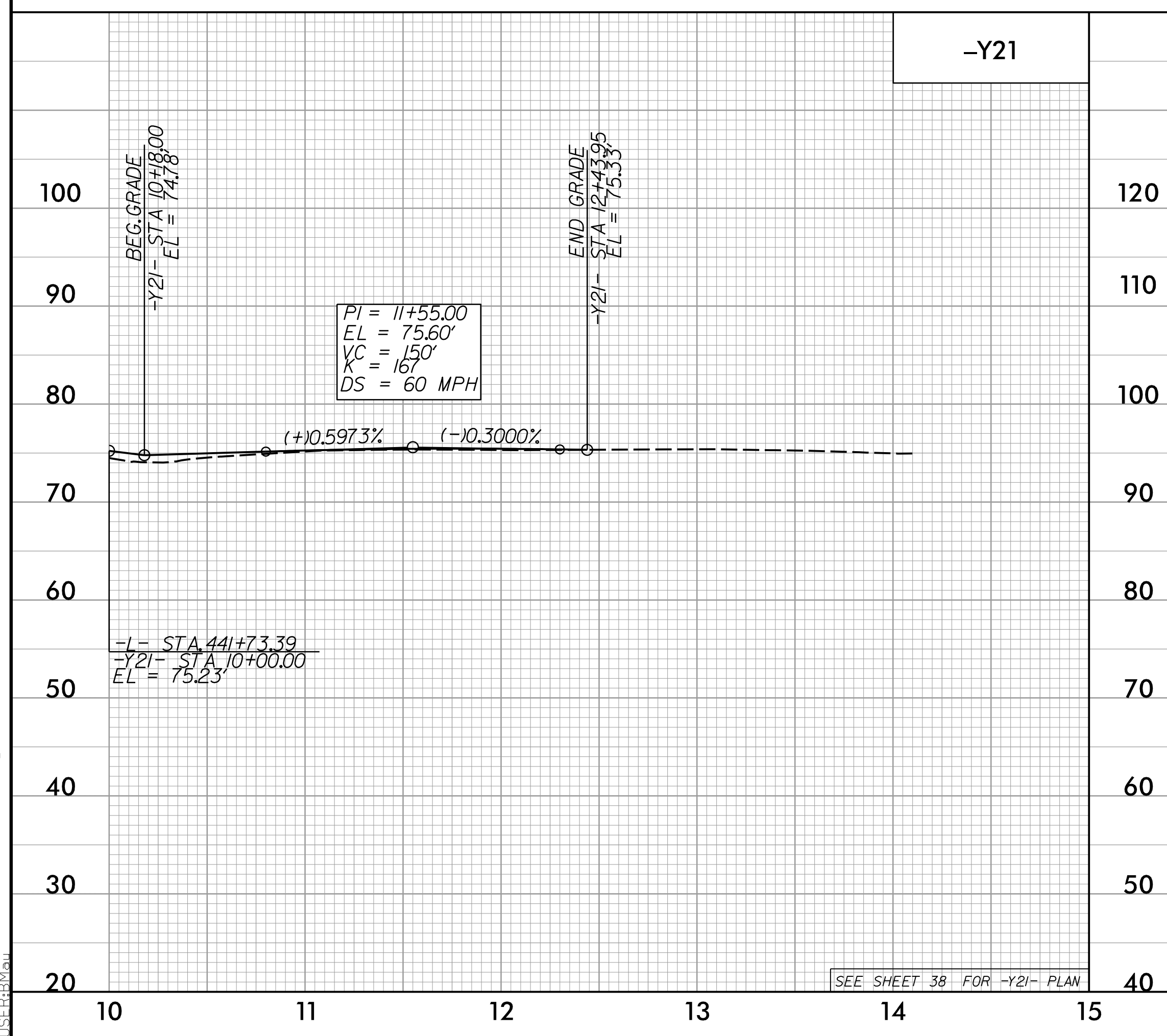
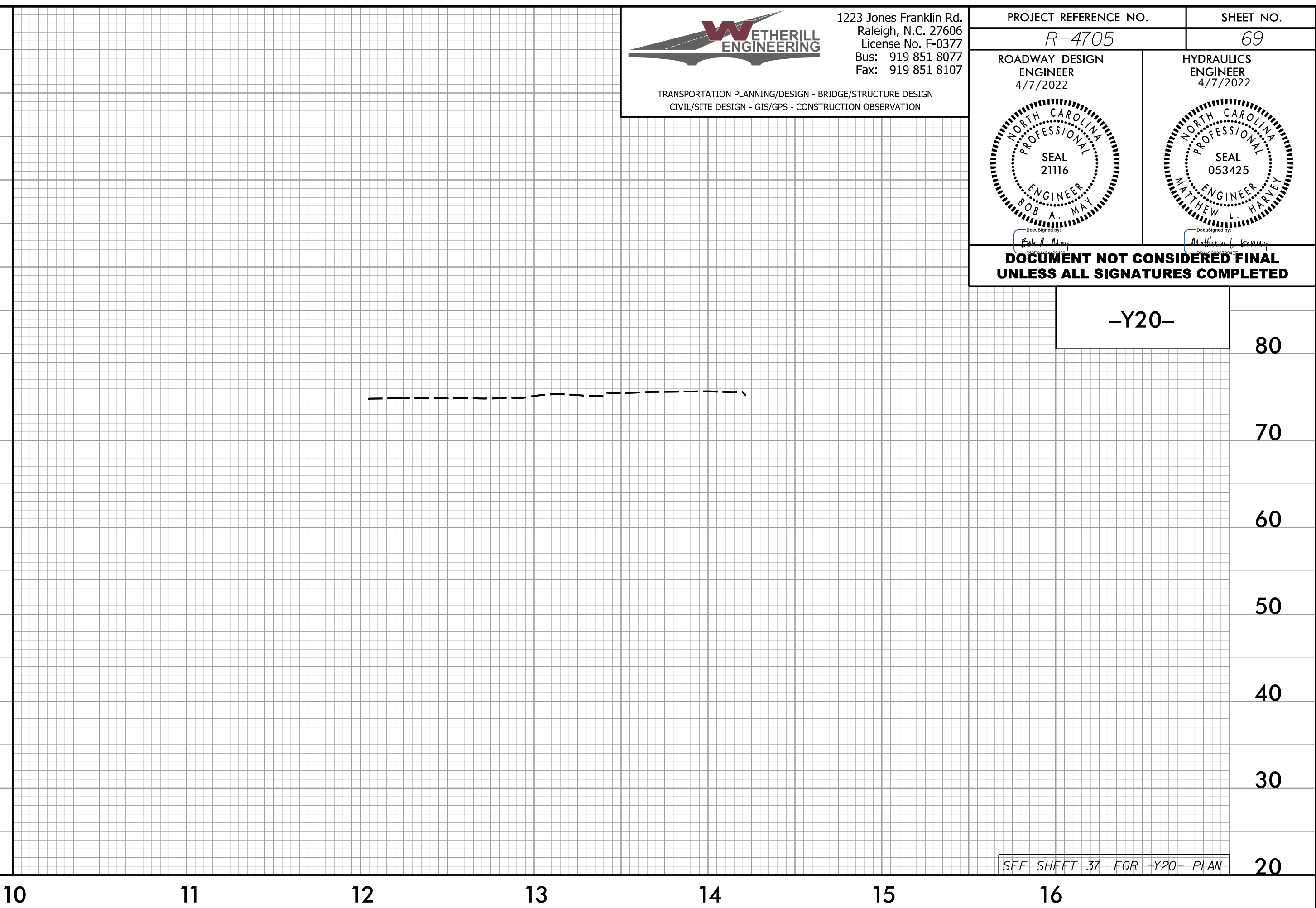
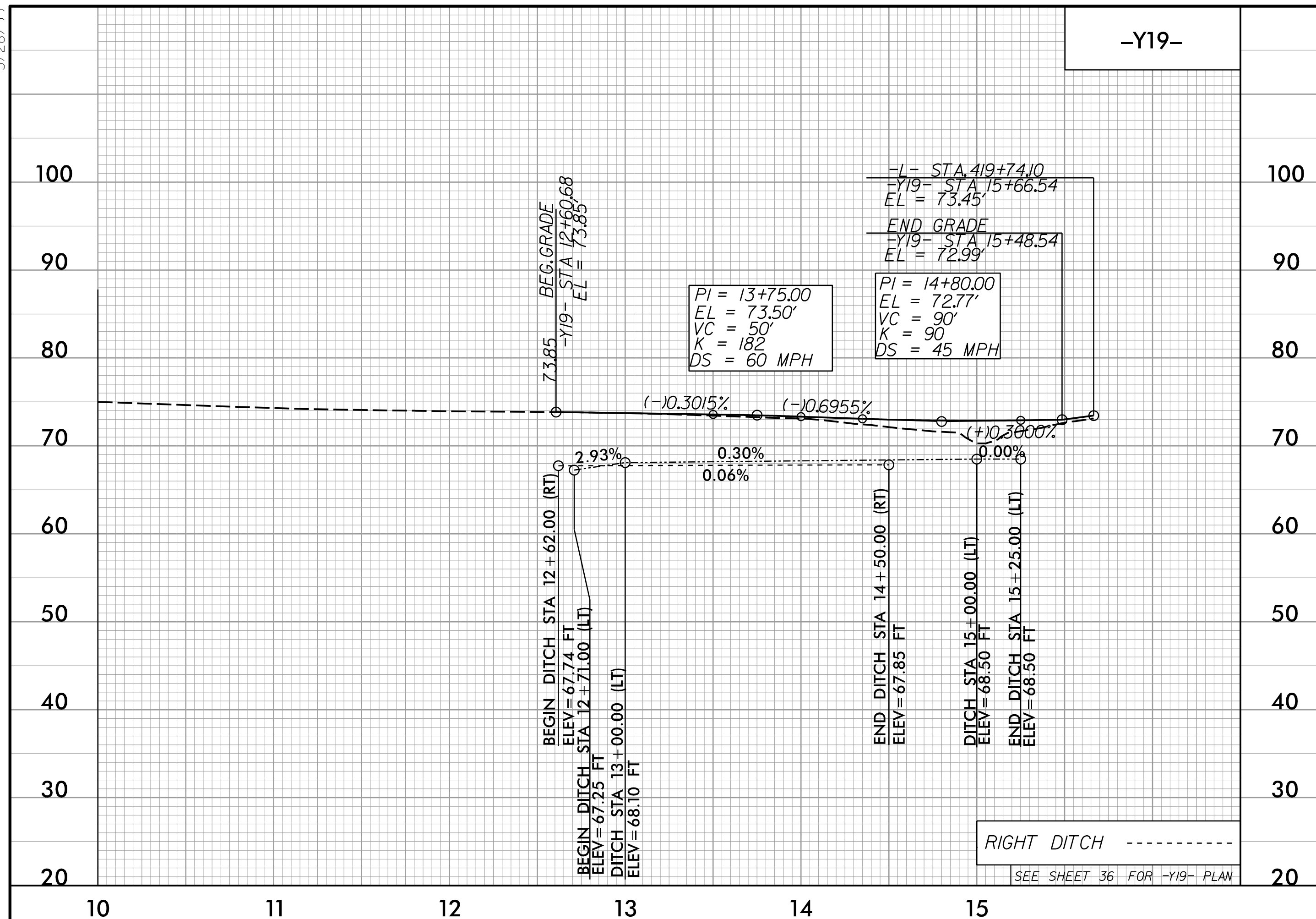
3/25/2022 4:47:05 PM d:\psh_68_PFL.dgn

5/28/99

WETHERILL ENGINEERING
 1223 Jones Franklin Rd.
 Raleigh, N.C. 27606
 License No. F-0377
 Bus: 919 851 8077
 Fax: 919 851 8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

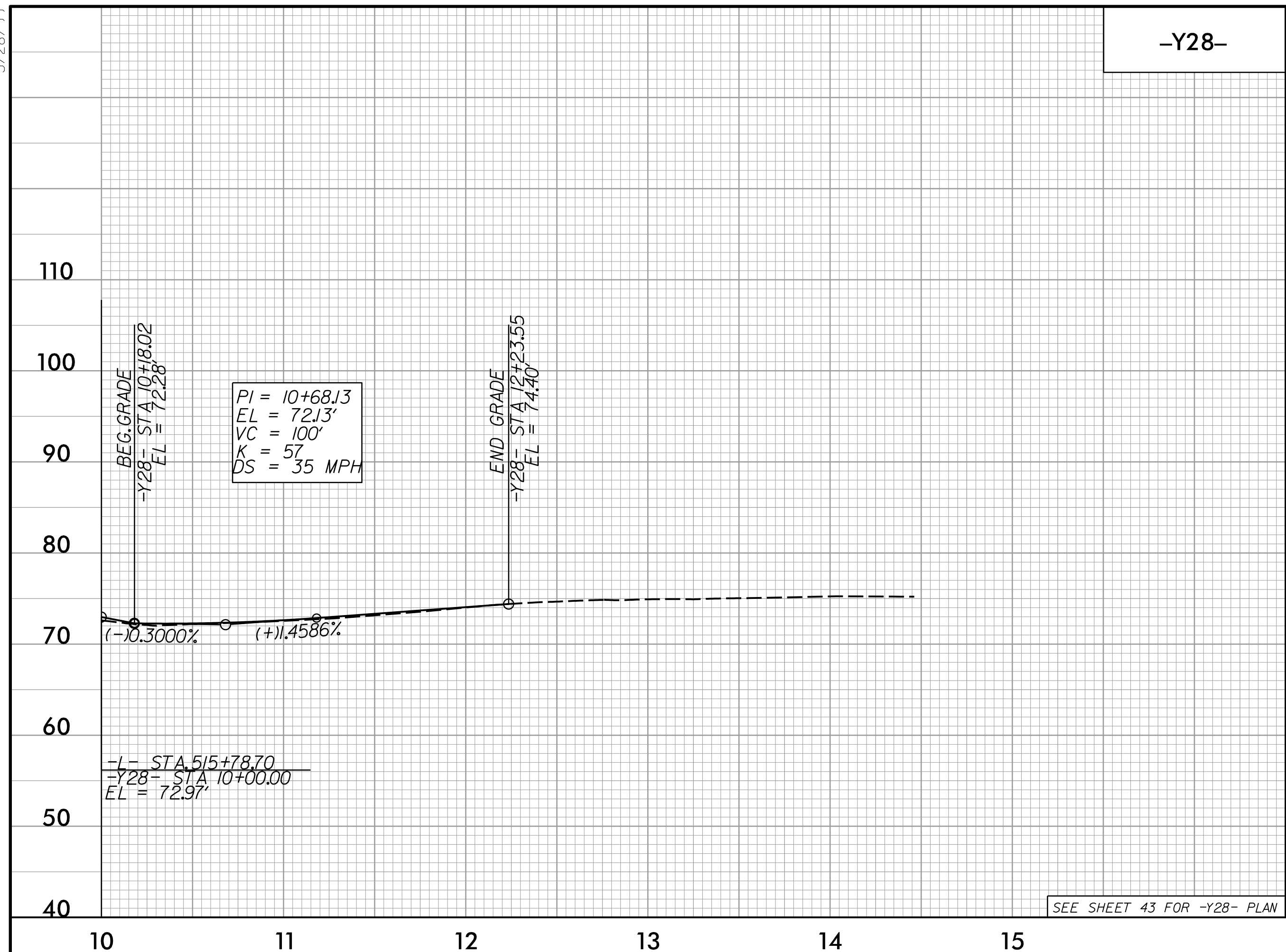
PROJECT REFERENCE NO. <i>R-4705</i>	SHEET NO. <i>69</i>
ROADWAY DESIGN ENGINEER 4/7/2022	HYDRAULICS ENGINEER 4/7/2022
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



3/7/2022 R4705_Rdy_psh_69_PFL.dgn

5/28/99

-Y28-

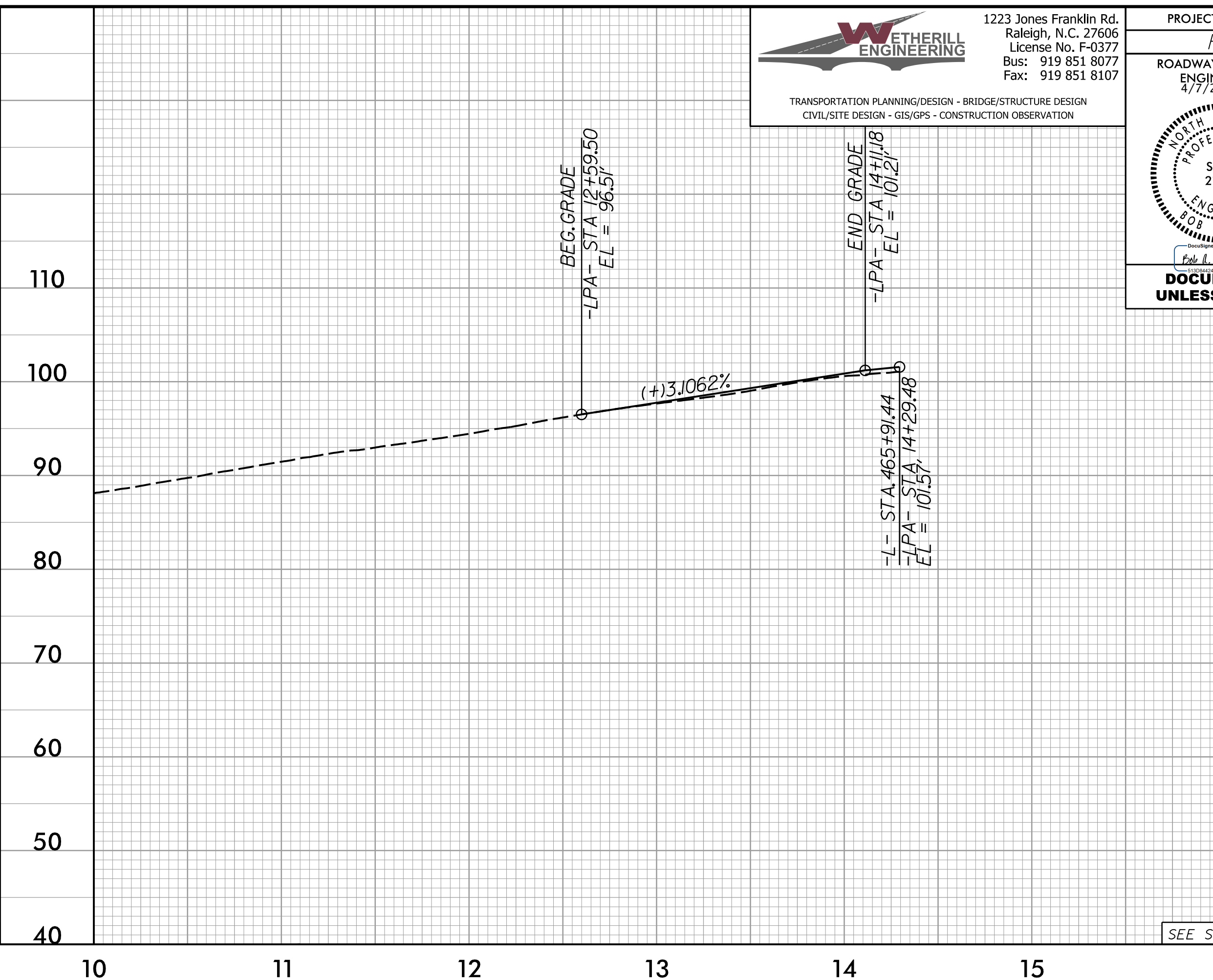


WETHERILL ENGINEERING
 1223 Jones Franklin Rd.
 Raleigh, N.C. 27606
 License No. F-0377
 Bus: 919 851 8077
 Fax: 919 851 8107

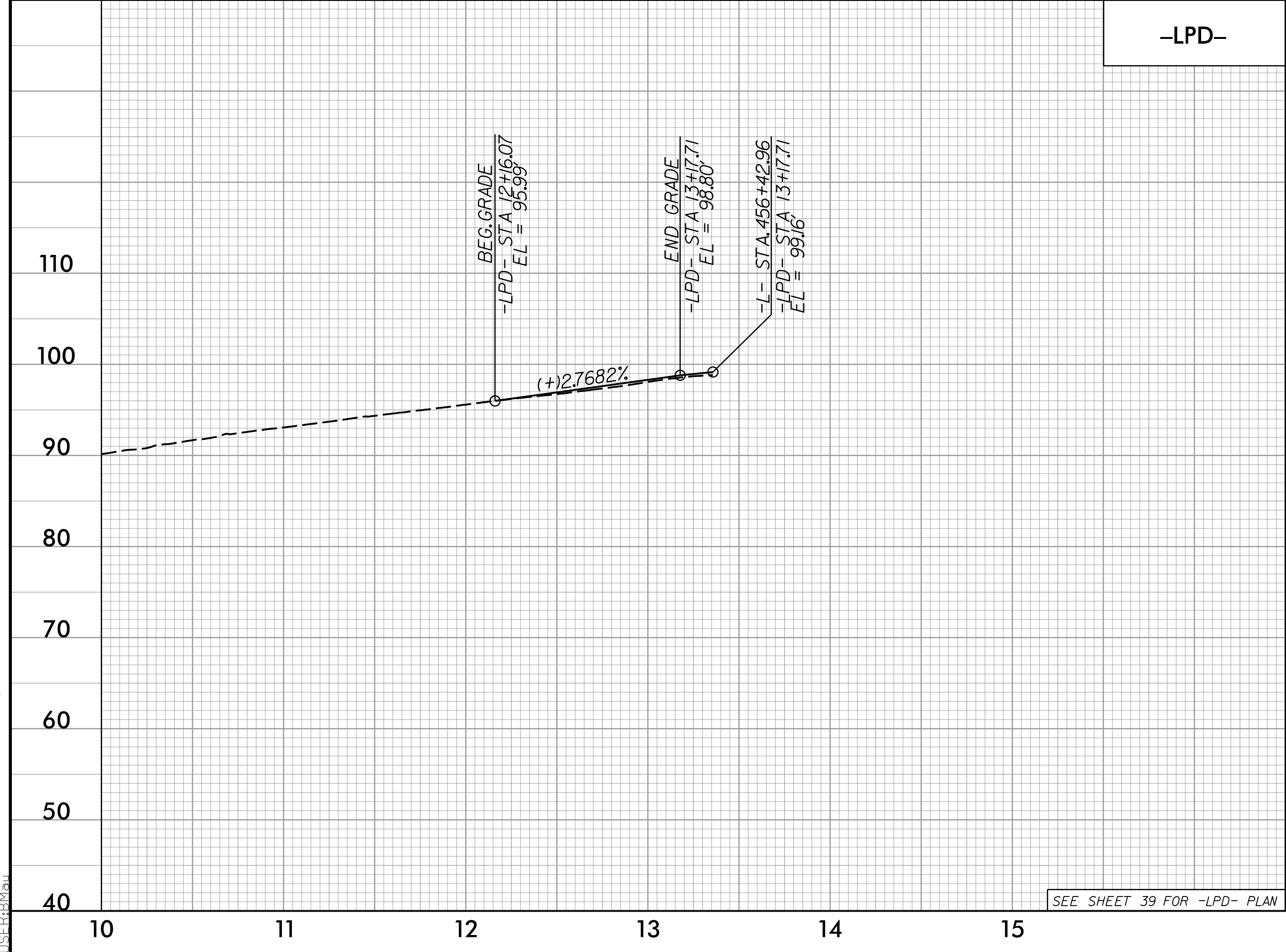
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

PROJECT REFERENCE NO. <i>R-4705</i>	SHEET NO. 71
ROADWAY DESIGN ENGINEER 4/7/2022	HYDRAULICS ENGINEER 4/7/2022
 SEAL 21116 BOB A. MAY NORTH CAROLINA PROFESSIONAL ENGINEER	 SEAL 053425 MATTHEW L. HARRIS NORTH CAROLINA PROFESSIONAL ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

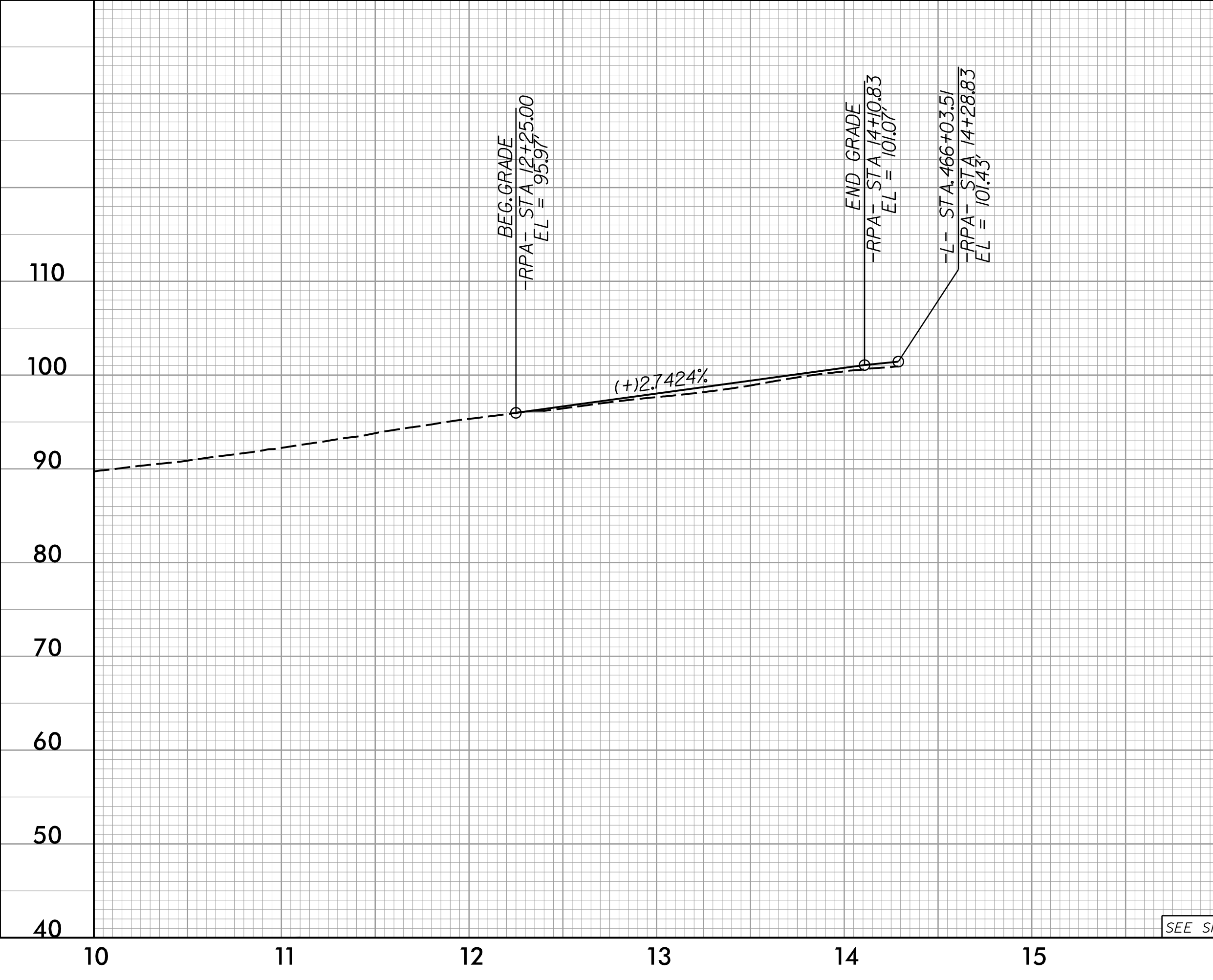
-LPA-



-LPD-



-RPA-



3/7/2022 R4705_Rdy_psh_71_PFL.dgn

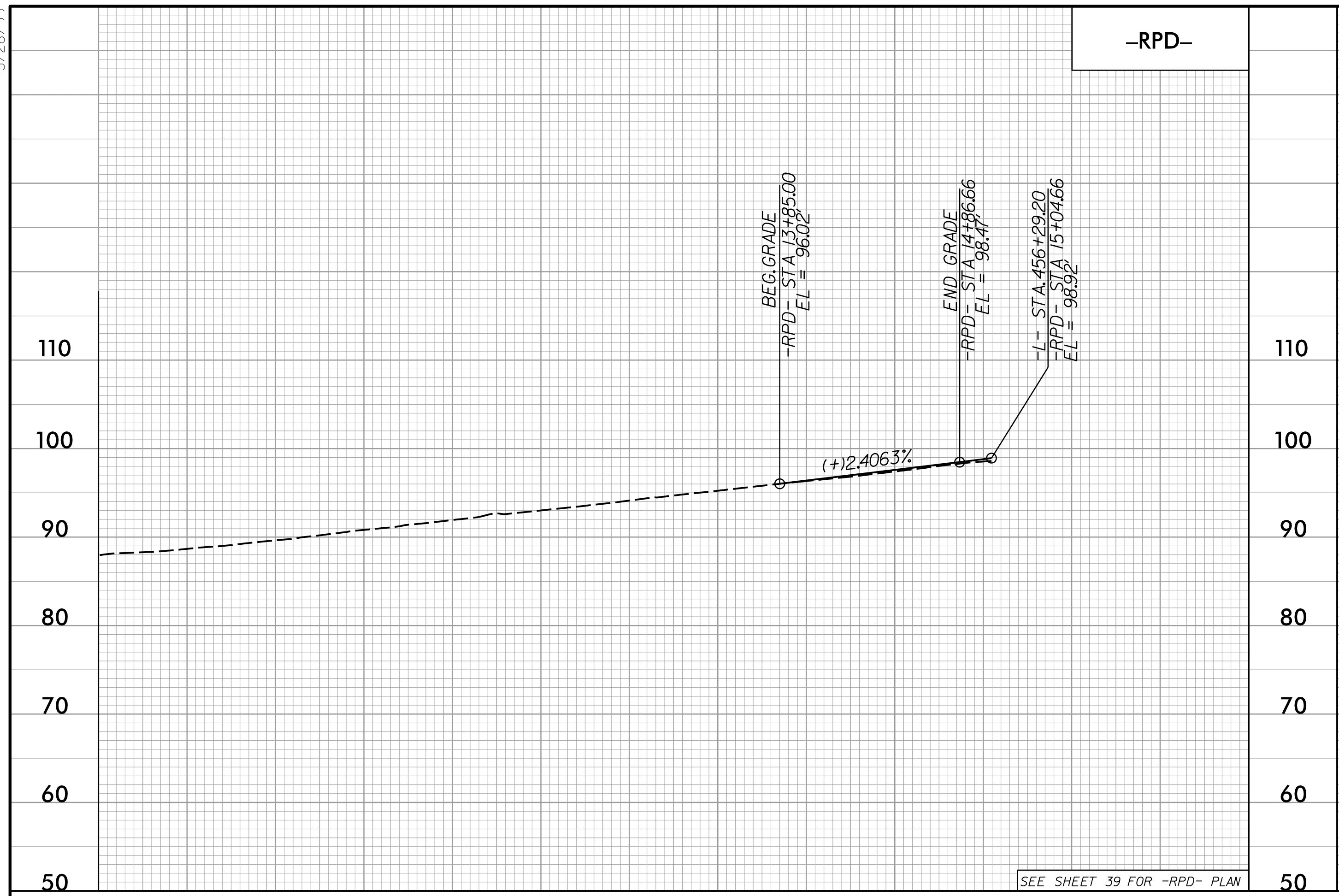
5/28/99

-RPD-

WETHERILL ENGINEERING
 1223 Jones Franklin Rd.
 Raleigh, N.C. 27606
 License No. F-0377
 Bus: 919 851 8077
 Fax: 919 851 8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

PROJECT REFERENCE NO. <i>R-4705</i>	SHEET NO. <i>72</i>
ROADWAY DESIGN ENGINEER 4/7/2022	HYDRAULICS ENGINEER 4/7/2022
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



SEE SHEET 39 FOR -RPD- PLAN

3/7/2022 R4705_Rdy_psh_72_PFL.dgn
USER:RMB

